

# Cardiovascular Diseases

## A training resources guide



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# Introduction

Cardiovascular disease (CVD) has been identified as the single biggest condition where lives can be saved by the NHS. The NHS Long Term Plan sets out ambitions for the next 10 years, highlighting CVD as a clinical priority. It outlines how improvements along the full pathway from symptom onset to ongoing care, including prevention, treatment and rehabilitation, could help prevent over 150,000 heart attacks. Correspondingly, by 2028, the proportion of patients accessing cardiac rehabilitation is aimed to be amongst the best in Europe, with up to 85% of those eligible accessing care.

Healthcare costs relating to CVD are estimated at £9 billion each year ([UK Health Security Agency, 2019](#)). Only 53% of patients are referred to cardiac rehabilitation after a heart attack/cardiac surgery and only 33% of those with heart failure [[Health Education England \(HEE\), 2021](#)].

HEE has highlighted the need to enhance workforce understanding of CVD and create a holistic online repository of CVD resources, due to its multifaceted nature and complexity including multiple conditions, risk factors and high risk conditions. For instance, improving accessibility to resources regarding the detection and treatment of high risk conditions of CVD such as Atrial Fibrillation (AF); hypertension and high cholesterol.

HEE aims to explore the support offer regarding CVD for the system on upskilling, knowledge and skills development, for example using the [HEE STAR](#) methodology to support workforce transformation.

# Background

Cardiovascular disease is a general term for conditions affecting the heart or blood vessels. It includes all heart and circulatory diseases, including coronary heart disease, angina, heart attack, congenital heart disease, hypertension, stroke and vascular dementia.

CVD affects approximately seven million people in the United Kingdom, with more than 100,000 hospital admissions each year due to heart attacks ([British Heart Foundation, 2021](#)). The [British Heart Foundation \(2020\)](#) estimates that more than half of people in the UK will get a heart or circulatory condition in our lifetime.

CVD is a significant cause of disability and death, accounting for a quarter of premature deaths in the UK, and it is responsible for the largest gap in health life expectancy. An individual is at highest risk of developing cardiovascular disease if they have atrial fibrillation, high blood pressure, high cholesterol, diabetes, a family history of heart disease, a severe mental illness, smoke or are from a black, Asian, minority ethnic (BAME) background.

CVD is largely preventable however, through lifestyle changes and a combination of public health and NHS action on risk factors mentioned above.

### Role of education

The aim of this guide is to provide learners with a comprehensive list of available resources that can be used to support cardiovascular workforce upskilling, training and development. The toolkit addresses a national gap in a central portal for CVD resources.

In light of recent events, the need for embedding virtual education into cardiovascular services has been highlighted, with digital solutions having a profound impact on the ability to share and learn information in cardiovascular medicine and its specialities. The need for accelerated dissemination of information and knowledge means changes to how we educate and learn going forwards ([Senapati, Khan & Chebrolu, 2020](#)).

A digital version of this guide will be made available on e-learning for healthcare and any comments and feedback can be sent to [enquiries@e-lfh.org.uk](mailto:enquiries@e-lfh.org.uk)

## Supporting Organisations

British Heart Rhythm Society

College of Paramedics

Congenital Cardiac Nurses Association (CCNA)

Lagan's Foundation

National Institute for Cardiovascular Outcomes Research

Primary Care Cardiovascular Society

Primary Care Training Centre

Society of Vascular Nurses

The British Journal of Primary Care Nursing

The Chartered Society of Physiotherapy in Respiratory Care

The Queen's Nursing Institute

United Kingdom Clinical Pharmacy Association

# Prevention

## e-Learning for Healthcare (eLfH) and HEE

### All Our Health

Session	Description	Learning Objectives
<a href="#">All Our Health</a>	<p>This course contains a variety of bite-sized e-learning sessions to support health and care professionals in preventing illness, protecting health and promoting wellbeing, including material relevant to the primary prevention of CVD:</p> <ul style="list-style-type: none"> <li>• <a href="#">Adult Obesity</a></li> <li>• <a href="#">Childhood Obesity</a></li> <li>• <a href="#">Alcohol</a></li> <li>• <a href="#">Misuse of illicit Drugs and Medicines</a></li> <li>• <a href="#">Physical Activity</a></li> <li>• <a href="#">Musculoskeletal Health</a></li> <li>• <a href="#">Smoking and Tobacco</a></li> <li>• <a href="#">Mental Health and Wellbeing</a></li> </ul>	Each e-learning session has its own learning objectives.
<a href="#">All Our Health: Cardiovascular Disease Prevention</a>	This is a bite-sized session to give health and care professionals an overview of cardiovascular disease, including key evidence, data and signposting to trusted resources to help prevent illness, protect health and promote wellbeing.	<ul style="list-style-type: none"> <li>- Recognise CVD as a significant health issue.</li> <li>- Discuss the benefits of achieving and maintaining a healthy cardiovascular system.</li> </ul>
<a href="#">All Our Health: NHS Health Checks</a>	This is a bite-sized session to give health and care professionals an overview of the NHS Health Check, including key evidence, data and signposting to trusted resources to help prevent illness, protect health and promote wellbeing.	<ul style="list-style-type: none"> <li>- Discuss the importance of the NHS Health Check services to prevent the onset of cardiovascular diseases and associated conditions.</li> <li>- Understand your role as a front-line health and care professional, team leader/manager or a senior/strategic leader in helping people reduce their risk of developing cardiovascular disease (CVD).</li> </ul>

Other resources

Session	Description	Learning Objectives
<a href="#">Population Wellbeing Portal</a>	<p>The portal provides a central location for free training and education resources relating to the health and wellbeing of the public, including e-learning, toolkits, videos, webinars and various publications to support the primary prevention of CVD:</p> <ul style="list-style-type: none"> <li>• <a href="#">Nutrition &amp; Obesity</a></li> <li>• <a href="#">Alcohol</a></li> <li>• <a href="#">Smoking</a></li> <li>• <a href="#">Substance Misuse</a></li> <li>• <a href="#">NHS Health Check</a></li> <li>• <a href="#">Wellbeing and Mental Health</a></li> <li>• <a href="#">Making Every Contact Count (MECC)</a></li> <li>• <a href="#">Health Literacy</a></li> </ul>	<p>Each e-learning session has its own learning objectives.</p>
<a href="#">Stroke Prevention in AF</a>	<p>This programme is aimed at GPs, pharmacists and non-specialist clinicians who care for patients with atrial fibrillation. The programme aims to improve participants knowledge of how to assess a patients stroke risk and suitability for anticoagulation therapy as well as educating participants on how to initiate and monitor anticoagulation therapy, including patient counselling.</p>	<ul style="list-style-type: none"> <li>- Understand the prevalence of AF.</li> <li>- Understand the relationship between AF and stroke.</li> <li>- Understand NICE and European Cardiology Society guidance for stroke prevention in AF and how to apply these in clinical practice.</li> <li>- Understand how to calculate stroke risk using CHA2DS2VASc and how to use this to support shared decision making with patients.</li> <li>- Understand how to identify modifiable bleeding risk factors and how to use this to support shared decision making with patients.</li> <li>- Basic knowledge of the coagulation pathway.</li> <li>- Basic pharmacology of warfarin and DOACs.</li> <li>- Understand the evidence behind anticoagulation decision making.</li> <li>- Knowledge about the potential adverse outcomes of anticoagulation and how to explain these to patients.</li> </ul>

Session	Description	Learning Objectives
		<ul style="list-style-type: none"> <li>- Awareness of common interactions of anticoagulants with other medications.</li> <li>- Understand how to counsel a patient before starting anticoagulation.</li> <li>- Knowledge about the importance of regular review anticoagulation.</li> </ul>

Learning sessions can be found on the [eLfh Behaviour Change Literacy for Individuals and Workforce Leaders e-learning programme webpage](#).

### **UCLPartners Proactive Care Framework - Cardiovascular disease (CVD) Resources:**

- [Atrial Fibrillation: Managing AF and Cardiovascular Risk](#)
- [Hypertension: Managing High Blood Pressure and Cardiovascular Risk](#)
- [Lipid Management including Familial Hypercholesterolaemia](#)
- [Type 2 diabetes: Managing Diabetes and Cardiovascular Risk](#)
- [Digital tools for Hypertension](#)
- [Digital tools for Type 2 Diabetes](#)
- [Digital tools for Atrial Fibrillation](#)
- [Digital tools for Cholesterol](#)

### **External resources**

- [NHS RightCare Cardiovascular Disease Resources](#)
- [Heart UK - Learning Resources](#)
- [Primary Care Issues & Answers - Preventing and Managing Cardiovascular Disease in a virtual setting – a practical approach \(Webinar\)](#)

### **National Institute for Health and Care Excellence (NICE):**

- [NICE Pathway on Cardiovascular Disease Prevention](#)
- [NICE Pathway on Familial Hypercholesterolaemia.](#)

### **Public Health England:**

- [Public Health England - Fingertips Resources](#)
- [Public Health England Cardiovascular Disease Data and Analysis: Guide for Health Professionals Resources](#)

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# Recognition and Management

## e-Learning for Healthcare (eLfH) and HEE

### Cardiovascular Examination

Session	Description	Learning Objectives
<a href="#">Cardiovascular Examination - Left to Right Shunts</a>	This session aims to briefly describe the different types of left to right shunt defects and how to approach diagnosis and management.	<ul style="list-style-type: none"> <li>- List the different types of left to right shunt defects.</li> <li>- Describe the anatomy and natural history for each defect.</li> <li>- Outline the clinical features and examination findings associated with each shunt.</li> <li>- List the investigations used and relevant findings.</li> <li>- Explain how to manage each type of left to right shunt defect.</li> </ul>
<a href="#">Cardiovascular Examination - Obstructive Lesions</a>	This session explains the different types of obstructive lesions and how to approach diagnosis and management.	<ul style="list-style-type: none"> <li>- Outline the different types of obstructive lesions.</li> <li>- Describe the natural history and pathophysiology for each lesion.</li> <li>- Explain the clinical features associated with each lesion.</li> <li>- List the investigations used and relevant findings.</li> <li>- Explain how to manage each lesion.</li> </ul>
<a href="#">Cardiovascular Examinations - Regurgitant Lesions</a>	This session describes regurgitant lesions. It also explains the clinical features, investigations and management of each lesion.	<ul style="list-style-type: none"> <li>- List the different regurgitant lesions.</li> <li>- Describe the aetiology and clinical features of each lesion.</li> <li>- Outline the investigational findings and management of each lesion.</li> </ul>
<a href="#">Cardiovascular Examination - Cyanotic Lesions</a>	This session describes cyanotic lesions. It also explains the clinical features, investigations and management of each lesion.	<ul style="list-style-type: none"> <li>- List the different cyanotic lesions.</li> <li>- Describe the management of each lesion.</li> <li>- Outline the clinical features and investigational findings of each lesion.</li> </ul>
<a href="#">Cardiovascular Examination - Acquired Heart Disease and Cardiomyopathy</a>	This session covers acquired heart diseases and cardiomyopathy: the causes, clinical features, investigations and management of common ones are considered.	<ul style="list-style-type: none"> <li>- State acquired heart diseases and types of cardiomyopathy in children.</li> <li>- Recognise the clinical features associated with common ones.</li> <li>- Select the investigations you would need to help with the diagnosis.</li> </ul>

Session	Description	Learning Objectives
		- Describe the initial management of common acquired heart diseases.

## Palpitations

Session	Description	Learning Objectives
<a href="#">Causes of Palpitations - Atrial Flutter</a>	This session describes the underlying conditions predisposing to the development of atrial flutter and outlines how the cardiac re-entrant arrhythmia can lead to the typical 12 lead ECG, the underlying arrhythmia circuit.	- Describe the key ECG features of typical atrial flutter and explain the abnormal re-entry circuit giving rise to the arrhythmia.
<a href="#">Palpitation Case 01</a>	This interactive scenario describes a case where a patient presents with palpitations and shortness of breath on exertion several weeks after cardiac surgery. 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 palpitations and shortness of breath by comparing your responses with those of an expert. - Determine any additional training needs in subject areas related to this case.
<a href="#">Examination of a 40-year-old woman with palpitations</a>	This session uses a video clip to demonstrate how to perform a focused, problem-based physical examination on a patient presenting with palpitations in primary care.	- Assess and demonstrate an appropriate physical examination in a patient presenting with palpitations. - Carry out a focused history attempting to elicit the potential diagnosis whilst trying to exclude more serious pathology. - Provide an appropriate management plan in a primary care setting. - Recognise when to refer to secondary or other specialist services.

Angina

Session	Description	Learning Objectives
<a href="#">Unstable Angina and Non-STEMI</a>	This session covers the risk stratification and management of unstable angina and non-ST-segment elevation myocardial infarction.	<ul style="list-style-type: none"> <li>- Perform a risk stratification as part of the assessment and management of non-ST-elevation acute coronary syndromes (NSTEMI-ACS).</li> <li>- Describe the initial management of NSTEMI-ACS in terms of anti-thrombotic and anti-ischaemic pharmacological therapy.</li> <li>- Describe the relationship between pharmacological and mechanical strategies in the management of NSTEMI-ACS.</li> <li>- Determine for which patients aggressive pharmacological and mechanical therapies are appropriate.</li> </ul>
<a href="#">Management of STEMI and its Complications</a>	Acute coronary syndromes (ACS) encompass a range of presentations including unstable angina (UA), non-ST-segment elevation myocardial infarction (NSTEMI) and ST-segment elevation myocardial infarction (STEMI). This session addresses the management of STEMI and its complications.	<ul style="list-style-type: none"> <li>- Define STEMI in the context of presentation with chest pain and acute coronary syndromes.</li> <li>- Formulate a specific reperfusion strategy for your patient based on current evidence, the clinical presentation and available resources.</li> <li>- Deliver appropriate adjunctive therapy to patients with STEMI.</li> <li>- Identify the need for rescue PCI where appropriate.</li> <li>- Recognise and manage complications which occur in patients with STEMI.</li> </ul>
<a href="#">Different Presentations of Anginal Chest Pains</a>	This session describes the different presentations of patients with ischaemic heart disease.	<ul style="list-style-type: none"> <li>- Classify anginal according to its temporal pattern and relation to exertion.</li> </ul>

Cardiomyopathy

Session	Description	Learning Objectives
<a href="#">Causes of Hypertrophic Cardiomyopathy</a>	This session provides a brief overview of the different causes of hypertrophic cardiomyopathy.	<ul style="list-style-type: none"> <li>- List the various causes of hypertrophic cardiomyopathy (HCM).</li> </ul>
<a href="#">Investigation and Management of Hypertrophic</a>	This session covers the investigation, assessment and management of hypertrophic cardiomyopathy (HCM).	<ul style="list-style-type: none"> <li>- List necessary investigations in the assessment of a new patient with HCM.</li> </ul>

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Session	Description	Learning Objectives
<a href="#">Cardiomyopathy (HCM)</a>		<ul style="list-style-type: none"> <li>- Assess the risk of sudden cardiac death in patients with HCM.</li> <li>- Describe the principles of drug and device therapy in HCM.</li> <li>- Discuss the role of genetic counselling and testing.</li> <li>- Describe the management of left ventricular outflow tract obstruction, including pharmacological and invasive strategies.</li> <li>- Describe the management of other complications of HCM such as atrial arrhythmias, thromboembolic events and deteriorating left ventricular function.</li> </ul>

### Other resources

Session	Description	Learning Objectives
<a href="#">Hypertension: The Silent Killer - Making a difference in Primary Care</a> <ul style="list-style-type: none"> <li>• <a href="#">Video</a></li> <li>• <a href="#">Assessment</a></li> <li>• <a href="#">Video script</a></li> </ul>	<p>This programme incorporates up-to-date guidelines and evidence-based aims specifically addressing the needs for front-line primary care in the diagnosis and management of hypertension and CVD risk.</p> <p>The programme consists of a film and is accompanied by a short quiz to test knowledge and understanding of the topic.</p>	<ul style="list-style-type: none"> <li>- Improved knowledge and understanding of the hypertension and cardiovascular risk.</li> </ul>
<a href="#">Atrial Fibrillation</a>	<p>This session is about atrial fibrillation, the most common form of cardiac dysrhythmia.</p>	<ul style="list-style-type: none"> <li>- Explain the importance of the duration of atrial fibrillation and its implications for treatment options.</li> <li>- Identify which patients need emergency treatment of atrial fibrillation.</li> <li>- Identify which patients are best suited to a rate control strategy.</li> <li>- Identify which patients are best suited to a rhythm control strategy.</li> <li>- Describe appropriate treatment options for patients presenting to the emergency department with atrial fibrillation.</li> <li>- Describe how to assess stroke risk in all patients who present with atrial fibrillation.</li> </ul>

Session	Description	Learning Objectives
<a href="#">Acute Coronary Syndromes</a>	<p>This session is about the pathophysiology of acute coronary syndromes, defining acute myocardial infarction and recognising the various presentations and clinical features associated with acute coronary syndromes.</p>	<ul style="list-style-type: none"> <li>- Describe the pathophysiology underlying acute coronary syndromes.</li> <li>- Define acute myocardial infarction.</li> <li>- Classify the various presentations within the spectrum of acute coronary syndromes.</li> <li>- Interpret features of the history, examination and ECG in terms of likelihood ratios that increase or reduce the probability of definitive diagnosis.</li> <li>- Recognise the need for additional ECG leads where appropriate.</li> <li>- Describe the role of cardiac markers in patients with acute coronary syndromes.</li> </ul>
<a href="#">Pericarditis: Investigation and Management</a>	<p>This session considers causes of acute pericarditis, appropriate investigations to perform and management options.</p>	<ul style="list-style-type: none"> <li>- Recognise characteristic signs and symptoms of acute pericarditis.</li> <li>- State which investigations can be performed for acute pericarditis.</li> <li>- Recognise indications for pericardiocentesis and pericardial biopsy.</li> <li>- Determine which patients with acute pericarditis can be discharged.</li> <li>- Identify management strategies for acute pericarditis.</li> </ul>
<a href="#">Limb Pain and Swelling</a>	<p>This session addresses the causes of swollen, painful limbs, with a particular focus on deep vein thrombosis. The assessment, investigations and management of deep vein thrombosis will be covered.</p>	<ul style="list-style-type: none"> <li>- Divide causes of painful, swollen limbs into local, regional, and systemic.</li> <li>- Make an initial clinical assessment of the risk of deep vein thrombosis and select appropriate investigations</li> <li>- Outline treatment for deep vein thrombosis.</li> <li>- Suggest prevention measures for the long-term sequelae of deep vein thrombosis.</li> </ul>
<a href="#">Risk of In-stent Re-stenosis</a>	<p>This session discusses the types of stents used to reduce re-stenosis and their success rates.</p>	<ul style="list-style-type: none"> <li>- Compare and contrast the different types of stents and their corresponding risks of re-stenosis.</li> </ul>
<a href="#">Syncope: Guidelines and Treatment</a>	<p>This session explains the European Society of Cardiology guidelines on the investigation and management of syncope.</p>	<ul style="list-style-type: none"> <li>- Apply European Society of Cardiology (ESC) guidelines in evaluating syncope.</li> </ul>

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Session	Description	Learning Objectives
		- Take informed action to initiate treatment of vasovagal syncope.
<a href="#">Anoxic Seizures</a>	A description of abnormal movements that can occur during syncope.	- Differentiate syncope from seizures.
<a href="#">Pathophysiology Presentations and Management of Cocaine-related Chest Pain</a>	This session describes the pathophysiology, presentations and management of cocaine-related chest pain.	<ul style="list-style-type: none"> <li>- Describe what cocaine is and the prevalence of its use (as reported in the 2009 UN World Drug Report).</li> <li>- List the causes of cocaine-related acute coronary syndrome.</li> <li>- Explain how to investigate a patient with suspected cocaine-related acute coronary syndrome.</li> <li>- Describe the management of cocaine-related acute coronary syndrome and state how this differs from classical atherosclerotic acute coronary syndrome.</li> </ul>
<a href="#">Investigation, Management and Treatment of Mitral Stenosis</a>	This session provides an overview of the investigation of mitral stenosis and its subsequent management.	<ul style="list-style-type: none"> <li>- Identify the initial investigations required in the investigation of mitral stenosis.</li> <li>- Identify the need for the involvement of speciality teams.</li> <li>- Manage mitral stenosis.</li> </ul>
<a href="#">Diagnosis of Endocarditis</a>	This session reviews Duke criteria and exceptions for the diagnosis of infective endocarditis.	- Identify major and minor Duke criteria.
<a href="#">Definition of Postural Hypotension</a>	This session provides a definition of postural hypotension.	- Define postural hypotension.
<a href="#">Characteristics of Ventricular Tachycardia Versus Supraventricular Tachycardia</a>	This session covers how to identify the diagnostic features of ventricular tachycardia from a 12-lead electrocardiogram reading.	- Identify diagnostic features of ventricular tachycardia from a 12-lead ECG reading.
<a href="#">Causes of Mitral Stenosis</a>	This session covers the causes of mitral stenosis. It also looks at the importance of obtaining a full history regarding previous therapies	- Identify the common and rare causes of mitral stenosis.
<a href="#">Acute Management of Accidental</a>	This session looks at the diagnosis and management of an accidental hypothermic patient presenting either with or without cardio	<ul style="list-style-type: none"> <li>- Recognise cardiopulmonary arrest and conduct resuscitation in a hypothermic patient.</li> <li>- Categorise and treat a patient with hypothermia.</li> </ul>

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Session	Description	Learning Objectives
<a href="#">Hypothermia and its Complications</a>	respiratory arrest, and common complications. The initial rescue and recovery is not covered in this session.	<ul style="list-style-type: none"> <li>- Judge the lack of success in resuscitation and know when to stop.</li> <li>- Manage a hypothermic patient without cardio respiratory arrest.</li> <li>- Demonstrate an understanding of the complications and risks associated with a hypothermic patient.</li> </ul>
<a href="#">Acute Illnesses Which Can Present With Syncope</a>	This session covers acute illnesses which can present with syncope.	<ul style="list-style-type: none"> <li>- Recall the most common and some rarer acute illnesses which can cause syncope.</li> </ul>
<a href="#">C is for Circulation</a>	This session focuses on C for Circulation as the third stage of the ABCDE assessment approach.	<ul style="list-style-type: none"> <li>- Understand the anatomy and pathophysiology of the circulatory system</li> <li>- Recognise circulatory shock as a significant cause of acute deterioration.</li> <li>- Identify the types of shock and their management.</li> <li>- Understand sepsis and how to recognise and respond to a patient who shows signs of sepsis.</li> </ul>
<a href="#">Chronic Kidney Disease (CKD) - Hypertension in CKD</a>	This session explains how to evaluate and manage patients with hypertension associated with chronic kidney disease.	<ul style="list-style-type: none"> <li>- List the causes of hypertension.</li> <li>- Investigate patients with hypertension.</li> <li>- State the management principles for patients with hypertension.</li> <li>- Describe the utility of non-pharmacological measures in blood pressure control.</li> <li>- Describe the mechanism of action of anti-hypertensive medication.</li> <li>- List the common side-effects of anti-hypertensive medication.</li> </ul>
<a href="#">Chronic Kidney Disease (CKD) - Cardiovascular Disease in Renal Patients</a>	This session discusses the varied manifestations of vascular disease in patients with chronic kidney disease.	<ul style="list-style-type: none"> <li>- Investigate and manage a patient with renal artery stenosis.</li> <li>- Identify a patient with cholesterol embolism.</li> <li>- Describe the role of lipid lowering therapy in patients with chronic kidney disease.</li> <li>- List the risk factors for cardiovascular disease in patients with chronic kidney disease.</li> </ul>
<a href="#">Cardiac Disease and HIV</a>	This session is about cardiac and cardiovascular complications of HIV.	<ul style="list-style-type: none"> <li>- Describe clinical features, investigation and management of cardiac conditions associated with HIV, including uncommon</li> </ul>



Session	Description	Learning Objectives
		<p>conditions such as cardiomyopathy and primary pulmonary hypertension.</p> <ul style="list-style-type: none"> <li>- List causes of pericardial effusion in HIV infected individuals and plan appropriate investigation.</li> <li>- Describe the association between HIV and non-AIDS defining conditions such as cardiovascular disease and lipid dysregulation.</li> <li>- Evaluate pros and cons of antiretroviral agents in relation to a patient's risk of cardiovascular disease.</li> <li>- Discuss management of traditional cardiovascular risk factors including pharmacotherapies and their use with ART.</li> </ul>

### External resources

#### Heart Education Awareness Resource and Training through E-learning (HEARTE)

Session	Description	Learning Objectives
<a href="#">HEARTE Healthy Heart and Investigations</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Review the anatomy and physiology of the normal heart.</li> <li>- Describe the coronary circulatory system.</li> <li>- Describe the conduction system of the normal heart and relate it to the electrocardiogram.</li> <li>- Describe common diagnostic tests for investigation of cardiac disease.</li> </ul>
<a href="#">HEARTE Primary Prevention of Heart Disease</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Describe and identify risk factors to developing heart/cardiovascular disease and individuals specifically at risk.</li> <li>- Be aware of advice that should be shared to patients at risk.</li> <li>- Consider the need for risk assessment and tools that can facilitate this including the role and remit of the Keep Well Programme.</li> <li>- Identify primary prevention pharmacology.</li> <li>- Identify self management strategies specific to primary prevention and support required.</li> </ul>

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Session	Description	Learning Objectives
<a href="#">HEARTE Stable Coronary Artery Disease</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Describe the pathophysiology of coronary artery disease.</li> <li>- Describe and define stable angina including signs and symptoms the patient may present with.</li> <li>- Demonstrate knowledge of targeted risk factor management.</li> <li>- Outline the pharmacological management of stable coronary artery disease.</li> <li>- Demonstrate knowledge of appropriate investigations and interventions for stable coronary artery disease (angina).</li> </ul>
<a href="#">HEARTE Acute Coronary Syndrome</a>	This module explores the guidelines and information to the initial and ongoing care of an individual presenting with Acute Coronary Syndrome.	<ul style="list-style-type: none"> <li>- Define the term Acute Coronary Syndrome.</li> <li>- Describe the assessment and diagnostic process in ACS patients.</li> <li>- Describe pharmacological management of ACS.</li> <li>- Explain the rationale for diagnostic tests and different cardiac interventions in ACS.</li> <li>- Understand secondary prevention of both pharmacological and non-pharmacological management following ACS.</li> </ul>
<a href="#">HEARTE Cardiac Rehabilitation</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Define the term and outline the menu based pathway/phases of cardiac rehabilitation.</li> <li>- Summarise the cardiac rehabilitation tools and services used to support patients.</li> <li>- Gain an understanding of the importance of behavioural change within cardiac rehabilitation.</li> <li>- Develop awareness of the evidence supporting secondary prevention.</li> <li>- Develop awareness of discharge planning and ongoing community support following cardiac rehabilitation.</li> </ul>
<a href="#">HEARTE Heart Failure</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Define the term heart failure and be aware of the common causes.</li> <li>- Identify heart failure symptoms and be aware of the NYHA tool and its relation to assessment of the patient's symptoms.</li> <li>- Develop an awareness of the pharmacological and non pharmacological management of heart failure.</li> </ul>

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Session	Description	Learning Objectives
		<ul style="list-style-type: none"> <li>- Be aware of advanced therapies and their role in the trajectory of heart failure.</li> <li>Recognise the psychological influences in caring for patients living with heart failure and their carers.</li> <li>- Develop an awareness of the benefits and support for patients with heart failure and their families should be able to apply for.</li> </ul>
<a href="#">HEARTE Palliative Care</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Identify an awareness of triggers that may suggest a declining change in the persons overall condition.</li> <li>- Review the evidence available to support the holistic assessment influencing the delivery of supportive palliative care for persons living and dying from advancing cardiac disease.</li> <li>- Recognise the unique contribution of the Multi Disciplinary Team (MDT) in optimising person centred care.</li> </ul>
<a href="#">HEARTE Atrial Fibrillation</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Define the term atrial fibrillation.</li> <li>- Be aware of the psychological impact of living with a long term condition such as atrial fibrillation (including the screening tools available).</li> <li>- Understand the classification and causes of atrial fibrillation.</li> <li>- Recognise the signs and symptoms of atrial fibrillation.</li> <li>- Describe the treatment of atrial fibrillation to ensure an optimal quality of life.</li> <li>- Be aware of the stroke risk associated with atrial fibrillation and how that risk can be reduced.</li> </ul>
<a href="#">HEARTE Cardiac Investigations</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Describe common diagnostic tests for investigation of cardiac disease</li> <li>- Identify possible clinical indications for these cardiac investigations</li> <li>- Consider how to use a person-centred approach to decision making in determining appropriateness of investigations into cardiac disease</li> <li>- Recognise common electrocardiographic abnormalities</li> </ul>

Session	Description	Learning Objectives
<a href="#">HEARTE Hypertension</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Understand the use of imaging to identify flow/functional/structural abnormalities.</li> <li>- Define hypertension and classifications of essential hypertension</li> <li>- Describe the epidemiology of essential hypertension</li> <li>- Explain the pathophysiology of hypertension, including causes and consequences</li> <li>- Outline methods used to confirm a diagnosis of essential hypertension</li> <li>- Consider cardiovascular risk assessment tools used in the assessment of essential hypertension</li> <li>- Appraise the impact of pharmacological treatment and behaviour change approaches</li> <li>- Understand person-centred approaches for the management of individuals living with essential hypertension, focusing upon supporting self-management.</li> </ul>
<a href="#">HEARTE Inherited and Congenital Cardiac Disease</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Describe the two main inherited cardiac conditions (cardiomyopathies and channelopathies)</li> <li>- Describe the signs and symptoms of inherited cardiac disease</li> <li>- Identify when inherited cardiac disease should be considered as a diagnosis</li> <li>- Recognise the complications that may arise from inherited cardiac disease</li> <li>- Understand the role of specialist multidisciplinary clinics</li> <li>- Discuss management pathways for patients with inherited cardiac disease</li> <li>- Explore person centred approaches specific to living with inherited cardiac disease, across the lifespan.</li> </ul>
<a href="#">HEARTE Psychological Impact of Cardiac Disease</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership	<ul style="list-style-type: none"> <li>- Demonstrate increased knowledge in order to identify commonly presenting mental health conditions related to cardiac disease</li> <li>- Demonstrate an awareness of the bidirectional relationship between cardiac ill health and mental health</li> </ul>

## CVD Training Resources: a guide

Session	Description	Learning Objectives
	agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Understand a generic model of psychological adjustment to cardiac conditions</li> <li>- Explore self management strategies for facilitating emotional and behavioural adjustment to acute and chronic cardiac ill health</li> <li>- Recognise the signs of severe mental distress and associated risks</li> <li>- Outline appropriate referral systems and pathways for individuals experiencing mental health problems</li> <li>- Discuss the possible pharmacological and non-pharmacological management of mental health problems.</li> </ul>
<a href="#">HEARTE Multiple Conditions</a>	HEARTE has been designed primarily for use by registered health professionals across primary and acute services who are involved in general areas which include cardiac care, however wider health and social partnership agencies and staff may also benefit from using it.	<ul style="list-style-type: none"> <li>- Recognise the unique contribution of the Multidisciplinary Team in optimising person centred care for patients with cardiac disease and additional morbidities, regardless of individual patient profile and/or care context</li> <li>- Discuss common clinical conditions that may impact on cardiac disease and its management</li> <li>- Detail medications commonly used in cardiac disease and their potential interactions with those used for co-morbidities</li> <li>- Discuss risk assessment and management in relation to multi-morbidities and polypharmacy</li> <li>- Describe the possible psychological impact of living with multi-morbidities</li> <li>- Explore integrated, person centred approaches to health and social care that may be applied in the management of patients with multi-morbidities.</li> </ul>
<a href="#">Out of Hospital Cardiac Arrest: A Resource for Responders</a>	This resource aims to provide support and guidance for those attending an OHCA in a trained capacity.	<ul style="list-style-type: none"> <li>- Increase awareness of the potential physical, psychological and social consequences of OHCA on those involved, in whatever capacity</li> <li>- Facilitate those responding to an OHCA to recognise the aftercare and rehabilitation needs of those affected by the event</li> <li>- Enable those responding to OHCA to support individuals, within their scope of responsibility, and to sign-post</li> </ul>

Session	Description	Learning Objectives
		individuals to other, more specialised services, where appropriate - Provide a one-stop directory of resources and organisations available to support those on whom OHCA has impacted.

[HEARTE Glossary](#)

### Resuscitation external resources:

- [UK Coaching - Sudden Cardiac Arrest eLearning](#) – Sign in required.
- [Resuscitation Council UK - Lifesaver Immersive Game](#)

### Other external resources:

- [National Institute for Health and Care Excellence \(NICE\) Pathways on Cardiovascular Conditions](#)
- [NHS RightCare Cardiovascular Disease Resources](#)
- [Heart UK - Learning Resources](#)
- Sign in required:
- [Royal College of General Practitioners - Cardiorenal Metabolic Disease e-learning](#)
- [The British Journal of Cardiology e-learning Programmes](#)
- [Heart University - Paediatric Cardiac Learning Center and Adult Congenital Heart Disease Learning Center](#)
- [MIMS Learning - CPD for Healthcare Professionals e-learning](#)
- [Primary Care Issues & Answers - The ABC of CVD \(Webinar\)](#)

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# Paediatrics Recognition and Management

## e-Learning for Healthcare (eLfH) and HEE

### All resources

Session	Description	Learning Objectives
<a href="#">Cardiovascular Examination - Genetics</a>	This session outlines some of the syndromes, teratogens and most common maternal diseases that cause heart problems.	<ul style="list-style-type: none"> <li>- List some of the syndromes associated with congenital heart disease.</li> <li>- Describe the features of each syndrome.</li> <li>- Outline the cardiac defects of each syndrome.</li> <li>- List the teratogens and their related usual cardiac malformations.</li> <li>- Describe the most common maternal diseases and their associated cardiac malformations.</li> </ul>
<a href="#">Cardiovascular Examination - Assessment</a>	This session describes a comprehensive approach to the clinical assessment of an infant or child known to have a cardiac problem. It details what to include in a cardiac history and physical examination.	<ul style="list-style-type: none"> <li>- Describe a comprehensive approach to the clinical assessment of an infant or child known to have a cardiac problem.</li> <li>- State what to include in a cardiac history.</li> <li>- State what to include in a cardiac physical examination.</li> </ul>
<a href="#">Cardiovascular Examination - Presentation</a>	This session describes the presentation of an infant or child with a cardiac problem. It covers both cyanotic and acyanotic heart defects.	<ul style="list-style-type: none"> <li>- List the variety of ways that an infant or child with a congenital heart defect can present.</li> <li>- Describe the assessment and management of a cyanotic infant or child with a cardiac problem.</li> <li>- Describe possible presentations of an infant or child with an acyanotic cardiac problem.</li> </ul>
<a href="#">Cardiovascular Examination - Paediatric ECG and Arrhythmias</a>	This session covers normal heart rhythm and then discusses the common arrhythmias and syncope.	<ul style="list-style-type: none"> <li>- List common arrhythmias seen in children.</li> <li>- State the observations and measurements to be made when reading a paediatric ECG.</li> <li>- Recognise the clinical features associated with common arrhythmias.</li> <li>- Describe the management of common arrhythmias.</li> <li>- State the commonest causes of syncope and when to consider cardiac syncope.</li> </ul>



### External resources:

- [University of Worcester - The Congenital Heart Assessment Tool \(CHAT\)](#) is an early warning tool for parents to assess their infant at home.
- [Cardiac Risk in the Young - Educational Resources](#)

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# Electrocardiogram Assessment

## e-Learning for Healthcare (eLH) and HEE

### All resources

Session	Description	Learning Objectives
<a href="#">Brugada Syndrome</a>	This session addresses the incidental ECG finding of a Brugada pattern. It includes the identification of ECG abnormalities, the implications of the finding and how to manage the patient.	<ul style="list-style-type: none"> <li>- Identify the Brugada ECG pattern.</li> <li>- State the clinical implications of the ECG findings.</li> <li>- List the principles of management and investigation for a patient in the context of these incidental ECG findings.</li> <li>- Explain the management of the Brugada patient in general.</li> </ul>
<a href="#">The ECG in Acute Pericarditis</a>	This session covers the ECG in acute pericarditis and highlights how it differs from acute myocardial infarction. It also covers the complications of acute pericarditis (pericardial effusion and cardiac tamponade) and examines the associated ECG changes.	<ul style="list-style-type: none"> <li>- Recognise and interpret the ECG in pericarditis.</li> </ul>
<a href="#">Classic ECGs and Infarct Territories</a>	This session provides an overview of ischaemic electrocardiograms (ECGs) in acute medicine. It is not intended to teach how to interpret ECGs, but to understand the underlying coronary anatomy relative to their interpretation.	<ul style="list-style-type: none"> <li>- Recognise different ischaemic ECGs.</li> </ul>
<a href="#">ECG Interpretation in the Bradycardic Patient</a>	This session recaps the essentials of ECG interpretation, focusing on conduction defects and heart block.	<ul style="list-style-type: none"> <li>- Systematically assess an ECG for conduction defects.</li> </ul>
<a href="#">Intensive Care Echo &amp; Basic Lung Ultrasound - Assessment</a>	Assessment for <a href="#">Intensive Care Echo and Basic Lung Ultrasound Sessions</a> .	<ul style="list-style-type: none"> <li>- Assess and demonstrate your theoretical knowledge required prior to undertaking hands-on training in basic echo and lung ultrasound in intensive care (including the physics of ultrasound, anatomy and basic views, left and right ventricular function, life-threatening pathologies, basic lung ultrasound and some of the limitations and pitfalls that may be encountered).</li> </ul>



## Diagnostic Imaging

### e-Learning for Healthcare (eLfH) and HEE

#### Intensive Care

Session	Description	Learning Objectives
<a href="#">Intensive Care Echo &amp; Basic Lung Ultrasound - Assessment</a>	Assessment for <a href="#">Intensive Care Echo and Basic Lung Ultrasound Sessions</a> .	<ul style="list-style-type: none"> <li>- Assess and demonstrate your theoretical knowledge required prior to undertaking hands-on training in basic echo and lung ultrasound in intensive care (including the physics of ultrasound, anatomy and basic views, left and right ventricular function, life-threatening pathologies, basic lung ultrasound and some of the limitations and pitfalls that may be encountered).</li> </ul>
<a href="#">Doppler in Intensive Care Echocardiography (DICE): Theory</a>	This session develops basic 2D transthoracic echocardiography practice by describing Doppler theory and its clinical applications. It explains the role of Doppler in the comprehensive evaluation of cardiac function, valve pathology, and basic haemodynamics.	<ul style="list-style-type: none"> <li>- Describe the Doppler principle.</li> <li>- Identify what is meant by Spectral Doppler and Colour-flow Doppler.</li> <li>- Describe the applications and limitations of Spectral Doppler and Colour Flow Doppler in basic echocardiography.</li> </ul>
<a href="#">Doppler in Intensive Care Echocardiography (DICE): Clinical</a>	This session builds on the material covered in the <a href="#">Doppler in Intensive Care Echo (DICE): Theory</a> session by illustrating the value of Doppler using mitral regurgitation, aortic stenosis and pulmonary artery pressure measurement as examples.	<ul style="list-style-type: none"> <li>- Describe the apical long axis 2D echo view.</li> <li>- Describe the key Doppler findings in common valve pathologies.</li> <li>- Appreciate the value of integrating Doppler with 2D echo in clinical practice.</li> <li>- Appreciate the limitations of basic Doppler in evaluating cardiac pathology.</li> </ul>

#### Image Interpretation

Session	Description	Learning Objectives
<a href="#">Image Interpretation: Cardiovascular</a>	This session covers general principles of cardiac computed tomography (CT). It	<ul style="list-style-type: none"> <li>- Describe the general principles of cardiac CT.</li> </ul>

Session	Description	Learning Objectives
<a href="#">Computed Tomography - Introduction and Anatomy</a>	<p>provides a brief overview of patient preparation and CT technique along with a description of normal cardiovascular appearances. Relevant anatomy using both diagrams and CT images is described to aid the understanding of cardiac CT. The session also includes information on the technical challenges of cardiac CT.</p>	<ul style="list-style-type: none"> <li>- Describe the cardiac CT patient preparation and technique used.</li> <li>- Identify the technical challenges of cardiac CT.</li> <li>- Identify anatomy related to cardiac CT imaging.</li> </ul>
<a href="#">Image Interpretation: Cardiac Computed Tomography - Coronary Artery Screening</a>	<p>This session provides an introduction to screening for coronary artery disease (CAD) using computed tomography (CT) cardiac calcium scoring. The session also describes the use of CT angiography (CTA) and gives examples of congenital coronary artery anomalies.</p>	<ul style="list-style-type: none"> <li>- Provide background facts about coronary artery/heart disease (CAD/CHD).</li> <li>- Explain how coronary calcium scoring is carried out.</li> <li>- Identify how and why CT can be used to screen for CAD.</li> <li>- Identify various congenital coronary artery anomalies in adults.</li> </ul>
<a href="#">Image Interpretation: Cardiovascular Magnetic Resonance Imaging - Anatomy</a>	<p>This session briefly describes the use of magnetic resonance imaging (MRI) for the anatomical and functional evaluation of the heart and related vasculature. Anatomy of the heart and great vessels is demonstrated using diagrams and MR images.</p>	<ul style="list-style-type: none"> <li>- Identify normal cardiac anatomy on diagrams and MR images.</li> <li>- Describe the uses and indications for cardiac MRI.</li> <li>- Describe safety issues and contraindications for cardiac MRI.</li> </ul>
<a href="#">Image Interpretation: Cardiovascular Magnetic Resonance Imaging - Pathology</a>	<p>This session briefly describes a range of pathologies related to the heart and major vessels for which magnetic resonance imaging (MRI) can be used as an imaging modality. It focuses on cardiomyopathies, myocardial infarcts and cardiac masses as well as short descriptions of other pathologies along with their imaging appearances.</p>	<ul style="list-style-type: none"> <li>- Describe the basic pathology of a range of cardiac diseases and abnormalities.</li> <li>- Recognise the MRI appearances of a range of cardiac and major vessel diseases and abnormalities.</li> </ul>
<a href="#">Image Interpretation: Cardiac Imaging - Interventional Cardiac Procedures</a>	<p>This session is an introduction to common procedures undertaken in the cardiac catheterisation laboratory including pacemaker insertion and electrophysiology studies.</p>	<ul style="list-style-type: none"> <li>- Explore the basics of electrocardiography and identify common arrhythmias.</li> <li>- Describe the purpose of cardiac electrophysiology studies.</li> <li>- Explain the different clinical indications for pacemakers and implantable cardioverter defibrillators ICDs.</li> </ul>

Session	Description	Learning Objectives
		<ul style="list-style-type: none"> <li>- Recognise the components of pacemakers and ICDs on imaging.</li> <li>- Explore some of the potential complications after the insertion of pacemakers and ICDs.</li> </ul>
<a href="#">Image Interpretation: Cardiac Imaging - Echocardiography and Cardiac Nuclear Medicine Examinations</a>	<p>This session illustrates the basic image appearances of common echocardiography examinations. Cardiac nuclear medicine examinations making use of scintigraphy, single photon emission computed tomography (SPECT), and positron emission tomography (PET) are also described.</p>	<ul style="list-style-type: none"> <li>- Identify the role of basic echocardiography as a cardiac investigation.</li> <li>- Identify some of the basic principles and techniques of image acquisition in echocardiography.</li> <li>- Recognise the four chambers of the heart and basic anatomy on echocardiography images.</li> <li>- Identify the different types of cardiac nuclear medicine examinations, including their indications, strengths and weaknesses.</li> <li>- Recognise normal from abnormal and potential pitfalls of these modalities.</li> <li>- Appreciate the ways in which these examinations are used to assess cardiac physiology, such as left ventricular (LV) function.</li> </ul>
<a href="#">Image Interpretation: Catheter Studies - Typical Diagnostic Angiogram and Normal Findings</a>	<p>This session looks at coronary angiography technique and normal coronary artery anatomy (including variants) as demonstrated on diagrams and angiographic images.</p>	<ul style="list-style-type: none"> <li>- Describe the practical techniques used for gaining arterial access for coronary angiography.</li> <li>- Explain the advantages and disadvantages of the two commonly used access points.</li> <li>- Identify the main coronary arteries and side branches on both diagrams and angiograms.</li> <li>- Describe the views required to demonstrate the coronary arteries.</li> </ul>
<a href="#">Image Interpretation: Catheter Studies - Disease Diagnosis</a>	<p>This session looks at the procedures carried out during cardiac catheterisation including angiography, angioplasty, percutaneous coronary intervention (PCI) and intracoronary imaging.</p>	<ul style="list-style-type: none"> <li>- Recall the various uses of cardiac catheterisation.</li> <li>- Recognise coronary artery abnormalities.</li> <li>- Describe how PCI can be used to dilate coronary arteries.</li> <li>- Discuss how haemodynamic studies enhance the diagnosis of coronary artery disease (CAD).</li> <li>- Review the use of intravascular ultrasound and optical coherence tomography in coronary artery evaluation.</li> </ul>

Session	Description	Learning Objectives
<a href="#">Image Interpretation: Catheter Studies - Percutaneous Coronary Intervention (PCI) Treatment of Coronary Artery Disease (CAD)</a>	This session discusses angioplasty and percutaneous coronary intervention (PCI) in the management of coronary artery disease (CAD). Techniques, indications both technical and clinical, and patient outcomes are covered.	<ul style="list-style-type: none"> <li>- Describe the role of PCI in the treatment of coronary disease in relation to conservative management and coronary artery bypass graft/surgery (CABG).</li> <li>- Revise coronary artery anatomy.</li> <li>- Describe the stages involved in performing a PCI.</li> <li>- Identify the key devices and equipment used in PCI.</li> </ul>
<a href="#">Image Interpretation: Cardiac Imaging - Chest Radiography</a>	This session focuses on the heart and its appearance on chest radiographs. Anatomy and common pathology are discussed along with a range of devices and instrumentations which may be seen on chest radiographs.	<ul style="list-style-type: none"> <li>- Describe how a chest radiograph can be technically evaluated in relation to rotation, exposure, inspiration and patient position.</li> <li>- Describe the basic anatomy of the heart and related vessels and common pathological mediastinal processes that cause abnormal appearances on chest radiographs.</li> <li>- Describe common pathologies relating to the heart and mediastinum.</li> <li>- Describe devices seen on chest radiographs and recall their uses.</li> <li>- Describe the anatomy relevant to these devices, the correct positioning of the devices and common mistakes in placement of these devices.</li> </ul>
<a href="#">Image Interpretation of the Paediatric Skeleton: Child Development - Relevance to Imaging Children</a>	This session describes and explores how children develop from birth to the end of adolescence and how this impacts on considerations for communication before, during and after their diagnostic imaging procedures.	<ul style="list-style-type: none"> <li>- Describe how children and young people develop from birth to the end of adolescence.</li> <li>- Identify how different developmental stages may influence children and young people's behaviour.</li> <li>- Identify and link relevant theoretical perspectives to your practice.</li> <li>- Apply developmental considerations to communication strategies that can be used before, during and after imaging procedures.</li> </ul>
<a href="#">Image Interpretation: Nuclear Medicine - Myocardial Perfusion Imaging</a>	This session explains how the nuclear medicine procedure myocardial perfusion imaging can be used to investigate ischaemic heart disease.	<ul style="list-style-type: none"> <li>- Explain why myocardial perfusion imaging is used alongside other imaging techniques for ischaemic heart disease diagnosis and management.</li> <li>- Outline the imaging procedure.</li> </ul>

Session	Description	Learning Objectives
		<ul style="list-style-type: none"> <li>- Recognise normal image appearances and explain how normal and abnormal results can affect patient management.</li> </ul>
<a href="#">Image Interpretation: Nuclear Medicine - Cardiac Stressing for Myocardial Perfusion Studies</a>	<p>This session explains the need to stress patients as part of a nuclear medicine myocardial perfusion imaging study and describes some methods of cardiac stressing that can be used.</p>	<ul style="list-style-type: none"> <li>- State the considerations that must be taken into account when assessing a patient for their suitability for a stress myocardial perfusion imaging study.</li> <li>- Explain the need for the stressing procedure and the timing of the radiopharmaceutical administration.</li> <li>- Outline how the stressing procedure is conducted, for both exercise and pharmacological stress.</li> </ul>

### Abdominal Aortic Aneurysm

Session	Description	Learning Objectives
<a href="#">Unit 1: Principles of AAA Screening and Treatment</a>	<p>This unit covers the screening process and treatment options in the NHS AAA screening programme.</p>	<ul style="list-style-type: none"> <li>- Outline the human circulatory system and explain how it related to abdominal aortic aneurysms.</li> <li>- Describe the pathophysiology and formation of arterial disease.</li> <li>- Name the different treatment options for abdominal aortic aneurysms and briefly describe each of these options.</li> </ul>
<a href="#">Unit 2: Principles of Ultrasound for AAA Screening</a>	<p>This unit provides an introduction to the key principles of ultrasound and how they relate to screening for an abdominal aortic aneurysm. It also provides an introduction to the ultrasound machine controls.</p>	<ul style="list-style-type: none"> <li>- Describe the key principles of ultrasound and its applications.</li> <li>- Outline the advantages and disadvantage of ultrasound.</li> <li>- Explain how basic ultrasound machine controls work.</li> <li>- Understand how this relates to AAA screening.</li> </ul>
<a href="#">Abdominal Aortic Aneurysm: Programme Specific Operating Model</a>	<p>This resource aims to help you understand what is included and what is new in the AAA PSOM.</p>	<ul style="list-style-type: none"> <li>- What is a PSOM?</li> <li>- What has changed?</li> <li>- Summary of changes</li> </ul> <p>Jan 2021 - Report updated on gov.uk:  <a href="https://www.gov.uk/government/publications/abdominal-aortic-aneurysm-screening-programme-specific-operating-model">https://www.gov.uk/government/publications/abdominal-aortic-aneurysm-screening-programme-specific-operating-model</a></p>

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## Critical Care

### e-Learning for Healthcare (eLfH) and HEE

#### Intensive Care Echo and Basic Lung Ultrasound

Session	Description	Learning Objectives
<a href="#">Intensive Care Echo &amp; Basic Lung Ultrasound - Which Patients Benefit from Basic Echo?</a>	This session discusses the challenges of transthoracic echocardiography (TTE or 'echo') in the critically-ill patient plus the scope and role of echo in critical care. It looks at its usefulness in relation to the clinical setting and how echo can be used in the periarrest and arrest situation.	<ul style="list-style-type: none"> <li>- Recognise the clinical settings in which basic, entry-level echo is useful in critical care.</li> <li>- Identify the role of basic echo in diagnosis, monitoring and assessing the effects of therapies in critical care.</li> <li>- Explain the use of focused echo in the cardiac arrest situation, with advanced life support (ALS) compliance where appropriate.</li> <li>- Describe when it is appropriate to refer for a formal, comprehensive scan.</li> </ul>
<a href="#">Intensive Care Echo &amp; Basic Lung Ultrasound - Physics of Ultrasound and Image Optimisation</a>	This session is an introduction to basic ultrasound physics and an explanation of how to optimise images.	<ul style="list-style-type: none"> <li>- Describe the physical properties of sound waves and what happens to them as they pass through body tissue.</li> <li>- Comprehend how a simple ultrasonic transducer works and how real-time echocardiographic images are created.</li> <li>- Appreciate how imaging depth, gain and focus influence the quality of echo imaging and how to optimise these images.</li> </ul>
<a href="#">Intensive Care Echo &amp; Basic Lung Ultrasound - Anatomy and Basic Views</a>	This session looks at basic anatomy of the heart and lungs plus the relationship of this anatomy to the position of the ultrasound probe on the chest. The four basic transthoracic echocardiography (TTE or 'echo') windows and basic lung ultrasound views are covered.	<ul style="list-style-type: none"> <li>- Describe the chest landmarks for the acquisition of the four basic echo windows and lung ultrasound.</li> <li>- Relate the position of the ultrasound probe to the axis of the view through the heart, lungs and surrounding structures.</li> <li>- Identify the structures that appear on the resulting images.</li> <li>- Explain the relevance of the coronary arterial supply of the heart.</li> </ul>
<a href="#">Intensive Care Echo &amp; Basic Lung Ultrasound - Left Ventricular Function</a>	This session explains normal left ventricular (LV) function and how to diagnose an abnormal left ventricle (LV). Qualitative and quantitative methods of assessing LV function	<ul style="list-style-type: none"> <li>- Describe the structure and function of the normal LV and use simple methods to quantify LV size and function.</li> <li>- Recognise when the structure or function of the LV is abnormal and describe the findings.</li> </ul>

Session	Description	Learning Objectives
	<p>are described. Attention is drawn to ways in which pathology and interventions may influence the interpretation of a basic transthoracic echocardiography (TTE or 'echo') examination in the critical care setting. The importance of clinical context and of recognising when expert assistance is needed are emphasised.</p>	<ul style="list-style-type: none"> <li>- Appreciate how confounding factors seen in the critical care setting may influence interpretation of echo appearances.</li> <li>- Recognise when more expert assessment is indicated.</li> </ul>
<p><a href="#">Intensive Care Echo &amp; Basic Lung Ultrasound - Right Ventricular Function</a></p>	<p>This session reviews transthoracic echocardiography (TTE or 'echo') assessment of right ventricular (RV) dimensions, function and pathophysiology.</p>	<ul style="list-style-type: none"> <li>- Describe RV dimensions and have an appreciation of its complex geometry.</li> <li>- Identify how to assess RV systolic function.</li> <li>- Recognise the echocardiographic features of RV pressure overload and RV volume overload.</li> </ul>
<p><a href="#">Intensive Care Echo &amp; Basic Lung Ultrasound - Pathology</a></p>	<p>This session covers some of the pathological diagnoses that can cause haemodynamic instability and cardiac arrest: hypovolaemia (including sepsis), cardiac tamponade, pulmonary embolus (PE), thoracic aortic dilatation and acute aortic dissection.</p>	<ul style="list-style-type: none"> <li>- Describe the echo findings in the hypovolaemic patient in both spontaneously breathing and mechanically ventilated patients.</li> <li>- Distinguish between a pericardial collection and cardiac tamponade.</li> <li>- Identify the echo appearances of acute PE.</li> <li>- Recognise echo features associated with acute aortic dissection.</li> </ul>
<p><a href="#">Intensive Care Echo &amp; Basic Lung Ultrasound - Limitations and Pitfalls</a></p>	<p>This session describes factors that can lead to misdiagnosis, including ultrasound artifacts and normal cardiac anatomical structures that may be misdiagnosed as pathological processes. It also considers the limitations of basic echo in those who are inexperienced in its use.</p>	<ul style="list-style-type: none"> <li>- List the normal cardiac structures that can be wrongly labelled as pathological lesions.</li> <li>- Describe the different types of artifacts that can occur during ultrasound imaging.</li> <li>- Outline the limitations of a basic transthoracic study and identify when a comprehensive transthoracic echo examination is required.</li> </ul>
<p><a href="#">Intensive Care Echo &amp; Basic Lung Ultrasound - Assessment</a></p>	<p>Assessment for <a href="#">Intensive Care Echo and Basic Lung Ultrasound Sessions</a>.</p>	<ul style="list-style-type: none"> <li>- Assess and demonstrate your theoretical knowledge required prior to undertaking hands-on training in basic echo and lung ultrasound in intensive care (including the physics of ultrasound, anatomy and basic views, left and right ventricular function, life-threatening pathologies, basic lung ultrasound</li> </ul>

Session	Description	Learning Objectives
		and some of the limitations and pitfalls that may be encountered).

### Other resources

Session	Description	Learning Objectives
<a href="#">C for Circulation - Circulation Amber Lesson Plan</a>	This lesson plan is intended as a guide, based upon SOPs for Nightingale NHS Hospital London as part of the surge response for COVID19 in March 2020. If utilised outside of this remit, faculty & learners should cross-reference with local guidelines.	<ul style="list-style-type: none"> <li>- Demonstrate ability to safely identify changes to HR and 3 lead ECG waveforms and SpO2 waveforms/adjust the probe.</li> <li>- Demonstrate the ability to check pulse sites &amp; capillary refill/perfusion.</li> <li>- Describe the management of arterial line ICU monitoring including risks of an arterial line.</li> <li>- Describe how we sample &amp; monitor blood gasses in the ICU.</li> <li>- Consolidate learning by demonstrating how to perform observations and document them.</li> </ul>
<a href="#">Circulation Red Lesson Plan</a>	This lesson plan is intended as a guide, based upon SOPs for Nightingale NHS Hospital London as part of the surge response for COVID19 in March 2020.	<ul style="list-style-type: none"> <li>- State how and why we monitor ICU patients continuously inc. the different lines.</li> <li>- Demonstrate ability to safely identify changes to HR and 3 lead ECG waveforms and SpO2 waveforms / adjust the probe.</li> <li>- Describe how we monitor blood gasses in the ICU.</li> <li>- State how to escalate changes to the registered nurse (RN).</li> <li>- Describe the scope of your role in relation to the bedside team.</li> <li>- Consolidate learning by demonstrating how to perform observations and document.</li> </ul>

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## Rehabilitation

### e-Learning for Healthcare (eLfH) and HEE

#### Physical activity

Session	Description	Learning Objectives
<a href="#">Cardiovascular Conditions: Being Active</a>	This session discusses the positive impact of physical activity on people living with cardiovascular conditions.	<ul style="list-style-type: none"> <li>- Explain the relationship between physical activity and CVD.</li> <li>- Describe the role of activity in CVD prevention.</li> <li>- Describe the role of activity in CVD treatment and management.</li> <li>- List the risks of prolonged physical inactivity.</li> <li>- List the contraindications in extreme acute conditions.</li> </ul>

More resources can be found on the [eLfH Physical Activity and Health e-learning programme webpage](#).

#### Other resources

- [Physical Activity and Health Evaluation Survey](#)

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# Surgery

## e-Learning for Healthcare (eLfH) and HEE

### Cardiovascular and Pulmonary Disease

Session	Description	Learning Objectives
<a href="#">Cardiovascular and Pulmonary Disease: Coronary Heart Disease and Acute Myocardial Infarction</a>	This session provides a brief introduction to coronary heart disease and acute myocardial infarction.	<ul style="list-style-type: none"> <li>- Describe the pathogenesis of coronary heart disease.</li> <li>- Identify the signs and symptoms of acute myocardial infarction.</li> <li>- Identify the modifiable and non-modifiable risk factors associated with coronary heart disease.</li> <li>- Describe how to manage the risk of peri-operative myocardial infarction in patients with coronary heart disease.</li> <li>- Explain how changes on an ECG can localise narrowing or occlusion of coronary arteries.</li> </ul>
<a href="#">Cardiovascular and Pulmonary Disease: Obstructive Airways Disease</a>	This session provides a brief overview of obstructive airway disease.	<ul style="list-style-type: none"> <li>- Define obstructive airway disease.</li> <li>- Explain the conditions discussed focusing on asthma and chronic obstructive pulmonary disease.</li> <li>- Outline basic management.</li> <li>- Demonstrate an awareness of the implications for surgery, including the effects of smoking.</li> </ul>

### Shock

Session	Description	Learning Objectives
<a href="#">Shock: Adult Respiratory Distress Syndrome</a>	This session outlines the pathophysiology, diagnosis and treatment of adult respiratory distress syndrome (ARDS).	<ul style="list-style-type: none"> <li>- Identify the pathophysiological changes that take place in ARDS.</li> <li>- Recognise risk factors for the development of ARDS.</li> <li>- List the diagnostic criteria for ARDS, with particular relevance to the Berlin definition.</li> <li>- Describe common treatment strategies and limitations used in the Intensive care unit to manage ARDS.</li> </ul>

Session	Description	Learning Objectives
<a href="#">Shock: Cardiovascular Physiology</a>	This session will discuss cardiovascular shock in the context of trauma. It will provide an overview of the clinical presentation, physiology and management of the shocked patient.	<ul style="list-style-type: none"> <li>- Recognise the clinical presentation of shock</li> <li>- Classify the stages of shock</li> <li>- Define the principles of management of the shocked patient.</li> </ul>
<a href="#">Shock: Metabolic Response to Injury</a>	This session will describe the key features of the metabolic response to injury. It will provide an overview of the potential consequences of this response and factors that may affect it.	<ul style="list-style-type: none"> <li>- Define the factors mediating the metabolic response to injury</li> <li>- Identify the consequences of the metabolic response to injury</li> <li>- List the factors modifying the metabolic response to injury</li> <li>- Establish the clinical implications of the metabolic response to injury.</li> </ul>

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# Heart Failure

## e-Learning for Healthcare (eLfH) and HEE

### Heart Valve Disease

Session	Description	Learning Objectives
<a href="#">An Introduction to Heart Failure and Heart Valve Disease</a>	This session provides an introduction to heart failure (HF) and heart valve disease (HVD) in the UK.	<ul style="list-style-type: none"> <li>- Understand the epidemiology of HF and HVD.</li> <li>- List the sub-types of HF and HVD conditions and their causes.</li> <li>- Discuss the impact of HF and HVD on the individual as well as the NHS and wider society.</li> </ul>
<a href="#">Heart Valve Disease (HVD) - Introduction</a>	This session looks at the anatomy and physiology of heart valves, as well as the epidemiology of common types of HVD, including their prevalence and causes.	<ul style="list-style-type: none"> <li>- Describe the anatomy and physiology of normal heart valves and abnormal heart valves.</li> <li>- List the common types, and characteristics, of HVD.</li> <li>- Describe the role of primary care in the detection of HVD.</li> <li>- Describe the general principles of HVD.</li> <li>- Explain the implications of bicuspid aortic valve disease.</li> <li>- Explain the risk of delayed treatment of severe symptomatic HVD.</li> <li>- List the elements of a network-based system of care for HVD and the referral criteria to a heart valve clinic.</li> </ul>
<a href="#">Heart Valve Disease (HVD) - Diagnosis and Management in Primary Care</a>	This session discusses the diagnosis and the initial management of heart failure and heart valve disease in primary care in the UK.	<ul style="list-style-type: none"> <li>- Identify what is relevant in the patient's history and the examinations required for HVD.</li> <li>- Discuss possible investigations and any initial management required, as well as appropriate intervals for the review of patients with HVD.</li> <li>- Explains the role of community cardiology services.</li> </ul>
<a href="#">Heart Valve Disease (HVD)- Treatment and Follow-up</a>	This session looks at the indications of HVD, compares surgical and transcatheter treatments, and outlines the follow-up required.	<ul style="list-style-type: none"> <li>- Understand the indications for intervention in patients with HVD (aortic stenosis and mitral regurgitation) and which therapeutic options are available.</li> <li>- Identify the risks and benefits of different treatments, which patients need to know, and the outcomes after treatment.</li> </ul>

Session	Description	Learning Objectives
		<ul style="list-style-type: none"> <li>- Discuss the long-term prognosis, and the lifestyle changes required.</li> <li>- Understand how to recognise treatment failure.</li> </ul>
<a href="#">Heart Valve Disease (HVD)- Endocarditis</a>	This session discusses the diagnosis and management of endocarditis in primary care in the UK.	<ul style="list-style-type: none"> <li>- Understand the epidemiology and microbiology of endocarditis.</li> <li>- List the risk factors for endocarditis</li> <li>- Recognise common symptoms and signs of infective endocarditis.</li> <li>- Advice patients at risk.</li> </ul>

### Breathlessness

Session	Description	Learning Objectives
<a href="#">Assessment of Breathlessness</a>	This session gives a framework of how to assess breathlessness as an essential first step to appropriate management in the patient approaching the end of life.	<ul style="list-style-type: none"> <li>- Give a working definition of breathlessness, encompassing the physical experience and other factors.</li> <li>- Recognise the different types of pathophysiology (aetiology) that underlie breathlessness.</li> <li>- Outline the core steps involved in an assessment of breathlessness, to reach a diagnosis and initiate a management plan - listing the key elements of a breathlessness history and examination.</li> <li>- Recognise the range of investigations that can be used to aid diagnosis and treatment of breathlessness, if appropriate for the patient.</li> </ul>
<a href="#">Drug Management of Breathlessness</a>	This session reviews the use of drugs and oxygen within an integrated approach to the management of breathlessness in the patient approaching the end of life.	<ul style="list-style-type: none"> <li>- Describe the appropriate disease modifying treatments for the relevant cause of breathlessness in patients approaching end of life.</li> <li>- Explain how to prescribe and safely administer oxygen for patients with breathlessness in end of life care.</li> <li>- List the main drug options used to alleviate the symptom of breathlessness in end of life including use of low dose opioids.</li> </ul>

Session	Description	Learning Objectives
<a href="#">Non-drug Management of Breathlessness</a>	This session reviews non-drug interventions within an integrated approach to the management of breathlessness.	<ul style="list-style-type: none"> <li>- List the main non-drug options used to alleviate the symptom of breathlessness in end of life care patients.</li> <li>- Outline the utility and limitations of these approaches.</li> <li>- Recognise other breathlessness management interventions that are used alongside as part of an integrated approach to symptom control.</li> </ul>

### End of Life

Session	Description	Learning Objectives
<a href="#">Discussing 'Do Not Attempt CPR' Decisions</a>	This session explores the evidence and perceptions about attempts at cardiopulmonary resuscitation (CPR). It suggests effective ways of facilitating discussions with patients and their families about decisions related to attempting CPR.	<ul style="list-style-type: none"> <li>- Identify why discussions on end of life care create a challenge for professionals.</li> <li>- Evaluate the evidence for CPR success in patients approaching the end of life.</li> <li>- Outline the perceptions of patients, the general public and professionals on the success of CPR.</li> <li>- Identify accepted decision making pathways incorporating professional guidance and the legal position.</li> <li>- Apply the necessary skills to effectively and sensitively communicate CPR decisions.</li> <li>- Describe how to respond to challenging questions and scenarios regarding CPR decision making.</li> <li>- Assess your confidence in discussing end of life issues with patients.</li> </ul>
<a href="#">End-stage Cardiac Disease – Case study</a>	This session follows the case of a patient with advanced chronic heart failure. It describes the problems experienced by the patient and his family as the end of his life approaches and how best to manage this period.	<ul style="list-style-type: none"> <li>- Describe the triggers to conversations about end of life care with somebody who has end-stage cardiac disease.</li> <li>- Discuss the key physical and psychosocial issues that are faced, particularly by someone with end-stage cardiac disease.</li> <li>- Outline a sensible approach to managing end of life care for somebody with end-stage cardiac disease, both in the last year of life and in the terminal stages.</li> </ul>
<a href="#">Heart failure in end-of-life care</a>	This session has been written by a multidisciplinary group of cardiology and	<ul style="list-style-type: none"> <li>- Apply knowledge of the disordered pathophysiology in the management of heart failure.</li> </ul>

Session	Description	Learning Objectives
	palliative care specialists to help palliative care clinicians become more confident with managing patients with heart failure and knowing when to liaise with heart failure services.	<ul style="list-style-type: none"> <li>- Explain decompensation of heart failure, classes of heart failure drugs and when and which drugs to consider stopping in advanced heart failure.</li> <li>- Describe the different types of device therapy in heart failure and what needs to be considered before the patient is approaching end of life.</li> <li>- Discuss the management of refractory symptoms such as breathlessness.</li> <li>- Identify why it is important to work collaboratively with other services.</li> </ul>

### Other resources

Session	Description	Learning Objectives
<a href="#">How to Diagnose Heart Failure and Key Issues in an Echo Report</a>	This session aims to help build confidence in identifying patients who may have heart failure, in taking a relevant history and in examination.	<ul style="list-style-type: none"> <li>- Identify which patients to suspect HF in, which clinical symptoms suggest HF, and who to refer for further investigations.</li> <li>- Understand how to best use common tests including echocardiography and the basics of interpretation of an echocardiogram report.</li> </ul>
<a href="#">How to Optimise Management of Heart Failure in Primary Care</a>	This session looks at how to optimise management of heart failure in primary care and offers practical evidence-based approaches to managing patients that have heart failure with a reduced ejection fraction (HFrEF).	<ul style="list-style-type: none"> <li>- Understand NICE guidelines associated with treatment of heart failure.</li> <li>- Appreciate the evidence base behind treatments used for HF to optimise patients as well as explain to patients the importance of HF therapies.</li> <li>- Explains the second-line therapies available.</li> <li>- Discuss the benefit for patients from the use of SGLT-2 inhibitors.</li> <li>- Discusses treatment for patients with HFrEF.</li> </ul>
<a href="#">ACP and Different Illness Trajectories</a>	This session provides an overview of the concept of illness trajectories and its influence on the advance care planning (ACP) process in end of life care.	<ul style="list-style-type: none"> <li>- Describe the illness trajectories of common end of life care conditions.</li> <li>- Recognise factors that influence the pathway of an illness trajectory.</li> </ul>

Session	Description	Learning Objectives
		<ul style="list-style-type: none"> <li>- Analyse the different trajectory types and describe the limitations of the trajectory approach.</li> <li>- Discuss the implication of illness trajectories on the ACP process.</li> </ul>
<a href="#">Symptom Management Complicated by Coexisting Conditions</a>	<p>This session outlines some of the considerations to be taken into account when symptom management is complicated by coexisting conditions..</p>	<ul style="list-style-type: none"> <li>- Outline the main causes of progressive respiratory, cardiac, hepatic and chronic renal failure, the key symptoms of each and the implications for end-of-life care.</li> <li>- Describe some of the key problems of managing symptoms of more than one condition.</li> <li>- List some of the specific problems of drug management of symptoms with coexisting hepatic failure and renal failure in end-of-life care.</li> <li>- Explore the communication issues that may arise for those patients who face dying from their co-existing condition rather than their expected life-threatening illness.</li> </ul>
<a href="#">Long Term Conditions for Paramedics – Heart Failure</a>	<p>This session aims to enhance understanding of the pathophysiology, identification and pre-hospital treatment of heart failure.</p>	<ul style="list-style-type: none"> <li>- Describe the different types and pathophysiology of heart failure.</li> <li>- Explain how heart failure is classified, and the significance of this.</li> <li>- Describe evidence-based interventions for the treatment of heart failure.</li> <li>- Explain how best to treat patients experiencing acute heart failure in the pre-hospital emergency setting.</li> </ul>

### External resources:

- [Primary Care Issues & Answers - Heart Failure – The new standard of care: What we need to know in primary care \(Webinar\)](#)

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# Pregnancy

## e-Learning for Healthcare (eLfH) and HEE

### Cardiotocography

Session	Description	Learning Objectives
<a href="#">CTG Changes Caused by Hypoxia - Part 1</a>	This session covers the changes in the fetal heart rate in response to reduction in oxygen supply to the fetus.	<ul style="list-style-type: none"> <li>- List the key mechanisms resulting in reduction in oxygen supply to the fetus.</li> <li>- Describe the mechanism by which contractions can result in hypoxia.</li> <li>- Identify the changing pattern of fetal heart rate patterns with progressive hypoxia.</li> </ul>
<a href="#">CTG Changes Caused by Hypoxia - Part 2</a>	This session provides further information on changes in the fetal heart rate in response to reduction in oxygen supply to the fetus.	<ul style="list-style-type: none"> <li>- Identify the changing pattern of fetal heart rate patterns with progressive hypoxia.</li> <li>- Relate the cardiotocograph (CTG) pattern to the incidence of acidosis and adverse outcome.</li> <li>- State the criteria that point to an intrapartum cause of cerebral palsy.</li> </ul>
<a href="#">More Complicated Non-normal CTGs</a>	This session covers the less frequently encountered abnormalities in the cardiotocograph (CTG) during labour.	<ul style="list-style-type: none"> <li>- Describe the features, significance and underlying mechanisms of the following more complicated CTGs:                             <ul style="list-style-type: none"> <li>• Sinusoidal and pseudo-sinusoidal fetal heart rate (FHR) patterns.</li> <li>• Reduced baseline variability, saltatory and preterminal FHR patterns.</li> <li>• Determining baseline FHR in difficult cases.</li> <li>• Fetal cardiac arrhythmias, fetal abnormalities and fetal infections.</li> </ul> </li> <li>- Describe how the inability to classify and define the CTG leads to concern.</li> </ul>
<a href="#">CTGs in Special Circumstances - Part 1</a>	This session considers the cardiotocograph (CTG) in pregnancies associated with in utero growth restriction (IUGR), the preterm fetus,	<ul style="list-style-type: none"> <li>- Recognise how a CTG may differ in each special circumstance.</li> <li>- Recognise which of these changes represent normal physiology and which may represent pathology.</li> </ul>



Session	Description	Learning Objectives
	prelabour ruptured membranes and maternal pyrexia.	<ul style="list-style-type: none"> <li>- Appreciate how each circumstance influences the risk of fetal hypoxia.</li> <li>- Understand the need for a lower threshold for intervention once key features are recognised.</li> <li>- Appreciate which interventions may or may not be appropriate in each circumstance.</li> </ul>
<a href="#">CTGs in Special Circumstances - Part 2</a>	This session describes the characteristics and implications for CTG interpretation and management in the case of multiple pregnancy, meconium stained liquor, vaginal birth after previous caesarean section and breech presentation.	<ul style="list-style-type: none"> <li>- Describe the characteristics and implications for the CTG:                             <ul style="list-style-type: none"> <li>• In a multiple pregnancy.</li> <li>• When meconium stained liquor is present.</li> <li>• During a vaginal birth following previous caesarean section.</li> <li>• In a breech presentation.</li> </ul> </li> </ul>
<a href="#">Labour Interventions Impacting on the CTG</a>	This session describes the interventions that may occur during labour which can affect the cardiotocograph (CTG) and its interpretation.	<ul style="list-style-type: none"> <li>- List the common interventions in labour which may impact on the cardiotocograph (CTG) (especially oxytocin, maternal medication, epidural analgesia).</li> <li>- Outline the timing and mechanism by which they result in such changes.</li> <li>- Describe the management when such interventions result in CTG changes.</li> </ul>
<a href="#">NICE Guidelines</a>	This session elaborates on NICE (CG190) Guidelines, paying particular attention to the use of cardiotocography in the assessment of fetal well-being and the potential for errors in cardiotocograph interpretation.	<ul style="list-style-type: none"> <li>- Explain the place of cardiotocography in the assessment of fetal well-being.</li> <li>- Explain the NICE recommendations on electronic fetal monitoring, including hourly review, and documentation and scoring/classification of the cardiotocograph.</li> <li>- Describe the limitations of classification methods and the potential errors in interpretation of the cardiotocograph, including erroneous recording of the maternal heart rate.</li> </ul>

### Other resources

Session	Description	Learning Objectives
<a href="#">Causes, Investigation and Management of</a>	Valvular heart disease may be poorly tolerated in pregnancy; its recognition, assessment and management is detailed in this session.	<ul style="list-style-type: none"> <li>- Demonstrate that you understand the risks and management of pregnancy in aortic valve disease (AVD),</li> </ul>

Session	Description	Learning Objectives
<a href="#">Valvular Disease in Pregnancy</a>		mitral valve disease (MVD), pulmonary valve disease (PVD), and tricuspid valve disease (TVD). - Demonstrate that you understand the risks and management of pregnancy in mechanical valves.
<a href="#">Differential Diagnosis Investigation and Treatment of Chest Pain in Pregnancy</a>	This session looks at the causes of chest pain in pregnant women. It covers how to differentiate and investigate the pain as well as how to treat the causes, concentrating predominantly on thromboembolism, ischaemic heart disease and dissection.	- Identify the common causes of chest pain in pregnancy and know how to identify women at risk of such conditions. - Differentiate between the common causes based on clinical history and examination. - Describe how to manage investigations in pregnant women with chest pain appropriately and safely. - Explain how to treat a woman who is both presumed to have and diagnosed with pulmonary thromboembolic disease.
<a href="#">Cardiovascular Examination - Genetics</a>	This session outlines some of the syndromes, teratogens and most common maternal diseases that cause heart problems.	- List some of the syndromes associated with congenital heart disease. - Describe the features of each syndrome. - Outline the cardiac defects of each syndrome. - List the teratogens and their related usual cardiac malformations. - Describe the most common maternal diseases and their associated cardiac malformations.
<a href="#">Cardiovascular Adaptations to Pregnancy</a>	This session discusses why cardiovascular examination findings in pregnancy are different from those found in the non-pregnant state.	- Explain the significance of different cardiovascular examination findings in pregnancy.
<a href="#">The Impact of EFM on Labour Outcomes</a>	This session reviews the evidence of the value and limitations of electronic fetal monitoring (EFM) in monitoring low and high-risk labours.	- Describe the evidence of the value of EFM in low-risk labour and in high-risk labours. - List the drawbacks and limitations of EFM.
<a href="#">Additional Tests</a>	This session describes the value and role of additional intrapartum tests including fetal blood sampling, fetal ECG, pulse oximetry, and fetal stimulation testing.	- Describe the role and practise of FBS for both pH and lactate. - Appraise the evidence for the use of fetal ECG especially ST evaluation. - Explain the role of pulse oximetry and additional intrapartum tests. - Describe the role of fetal stimulation tests.

# Palliative Care

## e-Learning for Healthcare (eLfH) and HEE

### All resources

Session	Description	Learning Outcomes
<a href="#">General Approach to Assessment of Symptoms</a>	This session provides a general approach to the assessment of symptoms, an essential first step before a plan for symptom management and care can be started.	<ul style="list-style-type: none"> <li>- Outline the core steps in the assessment of symptoms to reach a diagnosis.</li> <li>- Recognise the range of investigations that can be used to aid diagnosis and treatment.</li> <li>- Describe some assessment situations when it is not appropriate to undertake further investigations or initiate treatment.</li> </ul>
<a href="#">Agreeing a Plan of Management and Care</a>	Once the patient's symptoms have been assessed a working diagnosis can be made. The clinician can then propose a plan for improving symptoms, discussing any advantages, disadvantages and practicalities with the patient. This session examines some of the different factors involved in agreeing a plan of management and care.	<ul style="list-style-type: none"> <li>- Identify some of the responsibilities of the clinician in proposing a plan of management.</li> <li>- Recognise the advantages of informed and collaborative decision-making between the clinician and the patient.</li> <li>- Describe the role of family members in agreeing the plan of management and care.</li> <li>- Give examples of situations in which it may not be appropriate to involve the patient in agreeing a management plan.</li> <li>- State some of the reasons why a patient facing the end of life may refuse or withdraw from the plan.</li> </ul>
<a href="#">Communicating the Plan of Management and Care</a>	This session discusses the different aspects that need consideration in effectively communicating the management plan to the patient, family/carers and to all professionals and services involved in the patient's care.	<ul style="list-style-type: none"> <li>- Recognise the need to ensure that the plan for symptom management and care has been clearly communicated to the patient, family and carers as appropriate.</li> <li>- Explain the advantages of clear, timely communication of the symptom management plan to relevant professionals and services.</li> <li>- Describe some of the difficulties that can arise if the plan for symptom management and care has not been communicated well.</li> </ul>

Session	Description	Learning Outcomes
<a href="#">Individual Preferences and Cultural Influences on Symptom Management</a>	<p>This session discusses the role of cultural influences and patients' individual preferences on symptom management and care plans.</p>	<ul style="list-style-type: none"> <li>- Explain the importance of ensuring that a patient approaching the end of life is offered sufficient information, at an appropriate level, to be involved in decision making about their symptom management and care plan and has the opportunity to express their preferences.</li> <li>- Recognise how cultural background influences the individual's approach to progressive illness/end of life, the meaning of symptoms for the patient and ways in which these may impact on management of symptoms and care.</li> <li>- Recognise the influence of one's own personal beliefs and attitudes when deciding and negotiating plans for care and symptom management.</li> </ul>
<a href="#">Influence of Transition Points and Crises on Decision-Making in Symptom Management</a>	<p>This session discusses how to deal with transition points and crises, both in terms of initial management options and how these options can be explained and discussed with patients approaching the end of life and their relatives and carers. The ways in which these transition points and crises influence decision-making in symptom management are explored.</p>	<ul style="list-style-type: none"> <li>- Explain the need to be alert for changes such as infections and unexpected crises in a patient's condition, which may mark transition points in an end of life population.</li> <li>- Assess the signs and symptoms of change and outline initial management options.</li> <li>- Recognise the impact of infections, transition points and crises on patients approaching the end of life and family/carers.</li> <li>- Outline how you can provide supportive communication and information about infections, transition points and crises, so that sensible and appropriate decisions related to symptom management can be made.</li> </ul>
<a href="#">Recognising Your Own Limitations in Symptom Management</a>	<p>This session discusses how being aware of your own skills and limitations can improve symptom management and care for patients at the end of life.</p>	<ul style="list-style-type: none"> <li>- Explain some of the key pressures felt by professionals in coping with symptom management in patients facing the end of life.</li> <li>- Describe how a professional's individual beliefs, values and personal coping strategies can impact on, or influence, patient care.</li> <li>- Describe the responsibilities of professionals to demonstrate self-awareness of their own limitations in</li> </ul>

Session	Description	Learning Outcomes
		<p>symptom management and to know when to seek help and support.</p> <ul style="list-style-type: none"> <li>- Recognise some of the personal skills that help the professional manage themselves and take care of their own well-being.</li> </ul>
<a href="#">Assessment of Physical and Cognitive Deterioration in Function</a>	<p>This session provides a framework for the assessment of physical and cognitive deterioration in function in end of life care patients.</p>	<ul style="list-style-type: none"> <li>- Explain the importance of regularly assessing physical and cognitive function in end of life care patients.</li> <li>- Outline the core elements in assessing physical and cognitive function and the key professionals involved in assessment.</li> <li>- Give examples of standardised tools used in clinical practice and research and their utility/limitations.</li> <li>- Outline the impact of deteriorating physical and cognitive function on the patient and their family/carers.</li> </ul>
<a href="#">Discussing hydration</a>	<p>This session focuses on communication with families and carers, both lay and professional, about decisions involving clinically assisted hydration at the end of life.</p>	<ul style="list-style-type: none"> <li>- Describe the common concerns expressed by patients and families regarding the giving or withholding of clinically assisted hydration at the end of life, including relevant cultural issues.</li> <li>- Review the evidence about the effectiveness of and the legal position regarding clinically assisted hydration at the end of life.</li> <li>- Develop the communication skills to identify and address the concerns raised by patients and families regarding the giving or withholding of clinically assisted hydration at the end of life.</li> <li>- Develop the skills to address the concerns of colleagues regarding the giving or withholding of clinically assisted hydration at the end of life.</li> </ul>
<a href="#">Assessment of spiritual wellbeing</a>	<p>Assessment of spiritual well-being is one of the four core areas (also known as domains) of a holistic assessment in end of life care. This session will explore this domain and its potential interactions with the other core areas.</p>	<ul style="list-style-type: none"> <li>- Define the term spirituality.</li> <li>- Describe the purpose of assessing spiritual well-being in end of life care patients.</li> <li>- Examine practical ways of identifying spiritual concerns in patients approaching the end of life.</li> </ul>

Session	Description	Learning Outcomes
		<ul style="list-style-type: none"> <li>- Describe how spiritual problems may affect other aspects of end of life care.</li> </ul>
<a href="#">Recognising the last months and days of life and verifying death</a>	<p>This session offers a framework for recognising patients who are at risk of deterioration and who may die soon (last months of life) and also recognising when death is imminent (last days). The priorities for care of the dying person are discussed and the communication with patients and families needed at these times is explored.</p>	<ul style="list-style-type: none"> <li>- Use the 'surprise question' to identify patients who may be approaching the end of their life.</li> <li>- Identify some key communication issues for patients and their family/carers in the dying phase and when death is imminent.</li> <li>- List the five priorities for care of the dying patient.</li> <li>- List the clinical signs that verify that a patient has died.</li> </ul>
<a href="#">When the dying process is protracted or unexpectedly fast</a>	<p>This session looks at the key issues facing two scenarios: where the dying process is protracted and where it is unexpectedly fast. It discusses how to support those around the patient in these situations.</p>	<ul style="list-style-type: none"> <li>- Describe the key issues which you could expect in two contrasting situations: where the dying process has been particularly protracted or where it has been unexpectedly fast.</li> <li>- Apply the five priorities of care for the dying person to the situations.</li> <li>- Discuss how to support families and those close to the patient in these situations.</li> <li>- Describe the impact that such situations may have on other patients nearby, staff and volunteers, and how to manage this.</li> </ul>
<a href="#">Talking about death and dying</a>	<p>This session explores the cultural issues surrounding death and dying in the UK and offers guidance on how to talk about this often difficult subject.</p>	<ul style="list-style-type: none"> <li>- Demonstrate an understanding of how different cultures approach death and dying.</li> <li>- Identify cultural barriers to discussing death and dying in the UK.</li> <li>- Recognise the importance of talking about death and dying.</li> </ul>
<a href="#">Breaking bad news</a>	<p>This session looks at ways in which to deliver bad news effectively when faced with end of life care situations. It also looks at some of the reasons why professionals find breaking bad news so difficult.</p>	<ul style="list-style-type: none"> <li>- Discuss areas that health and social care professionals find difficult around breaking bad news and reflect on your own practice.</li> <li>- Discuss the importance of preparation for breaking bad news.</li> <li>- Describe the strategy for breaking bad news using the SPIKES framework.</li> </ul>

Session	Description	Learning Outcomes
		- Discuss the need for follow up after breaking bad news. - Identify resources to support your development in breaking bad news.

### Other resources

- [End of Life Care \(e-ELCA\) e-learning resources](#)

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# Clinical leadership learning support

## e-Learning for Healthcare (eLfH) and HEE

### All resources

Session	Description	Learning Outcomes
<a href="#">Introduction to Leadership and LeAD</a>	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).	<ul style="list-style-type: none"> <li>- Recognise the importance of leadership skills for clinicians.</li> <li>- Explore the key concepts of leadership.</li> <li>- Identify the purpose and outcome of leadership in healthcare.</li> <li>- Describe how LeAD e-learning works to support the MLCF/CLCF.</li> <li>- Identify clinical situations that can support the development of clinical leadership further.</li> </ul>
<a href="#">Introduction to the Medical/Clinical Leadership Competency Framework</a>	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.	<ul style="list-style-type: none"> <li>- Explain the rationale behind the development of the Medical/Clinical Leadership Competency Framework (MLCF/CLCF).</li> <li>- Describe the structure of the framework.</li> <li>- Explain shared leadership and how it relates to the framework.</li> <li>- Explain how the framework is being used to influence clinical education, training and development.</li> </ul>
<a href="#">Introduction to CLCF: Demonstrating Personal Qualities</a>	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.	<ul style="list-style-type: none"> <li>- Identify the four competence elements within this domain.</li> <li>- Explain why these elements are important for clinicians.</li> <li>- 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.</li> <li>- Demonstrate your contribution to leadership in clinical settings by identifying what you will do to develop competence in demonstrating personal qualities.</li> </ul>
<a href="#">Values and Attitudes in Practice</a>	This session explores values, beliefs, prejudice and stereotyping. It	<ul style="list-style-type: none"> <li>- Define values, beliefs and prejudice.</li> </ul>

Session	Description	Learning Outcomes
	<p>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.</p>	<ul style="list-style-type: none"> <li>- Explain and reflect on how individual and institutional beliefs are developed.</li> <li>- Make the link between values, beliefs and behaviour.</li> <li>- Understand how effective reflection on difficult situations can be used to change behaviour.</li> <li>- Consider the effect of prejudice and stereotyping on your professional practice.</li> <li>- Consider your role in upholding the values and beliefs of the profession and/or organisation.</li> <li>- Identify how you demonstrate leadership by acting to minimise the negative impact of assumptions and prejudices on patients and other staff.</li> </ul>
<p><a href="#">Team Roles and Personality</a></p>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Describe the most common approach to identifying aspects of personality and behaviour of individuals in the workplace.</li> <li>- Explain the influence of personality type on behaviour and consider circumstances where preferred behaviours may or may not be appropriate.</li> <li>- Determine the consequences of individuals with different preferences and approaches working together within teams.</li> <li>- Demonstrate your contribution to leadership by identifying the steps you will take to increase team effectiveness.</li> </ul>
<p><a href="#">Feedback for Personal Development</a></p>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Detail the principal methods of obtaining feedback from others about personal impact and performance.</li> <li>- Identify and critically evaluate different feedback methods.</li> <li>- List means of using information from such feedback and securing appropriate support.</li> <li>- Describe the link to the Medical/Clinical Leadership Competency Framework.</li> <li>- Demonstrate your contribution to leadership by identifying how to develop your own skills at giving feedback.</li> </ul>

Session	Description	Learning Outcomes
<a href="#">Errors and Experiences in Healthcare</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Explain what is meant by patient safety and clinical errors.</li> <li>- Categorise the types of clinical error that can occur, identifying those most likely within your own area of work.</li> <li>- Describe local and national processes for managing safer care.</li> <li>- Identify where the clinician can play a lead role in promoting safer care (using a case study).</li> <li>- Identify learning which may arise from clinical errors (whether by self or others).</li> <li>- Identify how, through demonstrating leadership, you will address issues in the future.</li> </ul>
<a href="#">Managing Personal and Professional Development</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- State the requirements for clinicians to demonstrate a consistently high standard in all aspects of their work.</li> <li>- Understand how individual performance impacts on the wider healthcare system.</li> <li>- Identify the range and means of identifying personal and professional development needs.</li> <li>- Describe the link to the Medical/Clinical Leadership Competency Framework.</li> <li>- Identify any areas for future personal development arising from this module and any appropriate training opportunities available locally.</li> <li>- Demonstrate your contribution to leadership by identifying steps to show improvement in your own practice and leadership.</li> </ul>
<a href="#">Using Best Practice</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Describe what is meant by best practice in the context of a clinical service and consider how to source relevant examples of best practice.</li> <li>- List the advantages and disadvantages of using consistent approaches.</li> <li>- List the benefits of clear common processes and approaches shared across the healthcare system.</li> </ul>

Session	Description	Learning Outcomes
		<ul style="list-style-type: none"> <li>- Describe the reasons behind equity of provision and outcome for the population.</li> <li>- Describe the link to the Medical/Clinical Leadership Competency Framework.</li> <li>- Demonstrate your contribution to leadership in the clinical setting by recommending improvements to clinical guidelines.</li> </ul>
<a href="#">Using Policy and Guidance to Ensure Effective Healthcare</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- List the principal frameworks (professional, legal and ethical) which have a role in ensuring the delivery of effective healthcare.</li> <li>- 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.</li> <li>- Consider situations where non-adherence to governing frameworks has impacted on the service and the wider healthcare system.</li> <li>- Demonstrate your contribution to developing your leadership capabilities through reflection and awareness of the influence of these frameworks on your work.</li> </ul>
<a href="#">The Challenge of Probity</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Explore and define probity.</li> <li>- Identify how your professional body defines probity and what is required of you.</li> <li>- Discuss and critically evaluate the relationship between probity and effective leadership in healthcare.</li> <li>- 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.</li> </ul>
<a href="#">Introduction to CLCF: Working with Others</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Identify the four competency elements within this domain.</li> <li>- Explain why these elements are important for clinicians.</li> <li>- 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.</li> </ul>

Session	Description	Learning Outcomes
		<ul style="list-style-type: none"> <li>- Demonstrate your contribution to leadership in clinical settings by identifying what you will do to develop competence in working with others.</li> </ul>
<a href="#">Leadership Styles</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Examine the key definitions and models of leadership and leadership style.</li> <li>- Describe current predominant thinking around leadership.</li> <li>- Explain how leadership style can be driven by different situations.</li> <li>- State the most likely outcome of adopting the various leadership styles.</li> <li>- Analyse and critique your personal leadership styles and those of others.</li> <li>- Demonstrate your contribution to leadership by identifying leadership approaches to improving the experience of healthcare for patients.</li> </ul>
<a href="#">Team Dynamics</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Define a team and explain the differences between groups and teams.</li> <li>- Explain what constitutes an effective team and its development.</li> <li>- Recognise your personal contribution to effective team working and the skills required for leading a team.</li> <li>- State the interventions required for teams that are not functioning well.</li> <li>- Demonstrate your contribution to leadership through identifying actions to support effective functioning of teams.</li> </ul>
<a href="#">Effective Team Working</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Describe the range of teams and team structures that are found in healthcare settings, including those of which you are a part.</li> <li>- List the advantages of working across networks to deliver and improve services.</li> <li>- Identify the characteristics and benefits of multidisciplinary teams (MDTs) as well as any associated difficulties.</li> <li>- Demonstrate your contribution to leadership by identifying action to improve the way clinical teams function.</li> </ul>

Session	Description	Learning Outcomes
<a href="#">Working in a Group</a>	The session looks at what can make working groups successful, and what you can do to contribute towards achieving the group goals, whether you are the designated chair, or a member of the group.	<ul style="list-style-type: none"> <li>- Explain how working groups function.</li> <li>- Consider ways in which you can contribute to the effectiveness of a group.</li> <li>- Demonstrate leadership in your field of practice by reflecting on your contribution to a working group.</li> </ul>
<a href="#">Coaching for Practice</a>	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.	<ul style="list-style-type: none"> <li>- Describe the main features of a coaching approach.</li> <li>- Discuss how to create an effective coaching alliance.</li> <li>- Understand key techniques and approaches.</li> <li>- Discover how to motivate yourself and others.</li> <li>- Demonstrate your contribution to leadership by reflecting on coaching in a context relevant to your field of practice.</li> </ul>
<a href="#">Introduction to CLCF: Managing Services</a>	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.	<ul style="list-style-type: none"> <li>- Identify the four competence elements within this domain.</li> <li>- Explain why these elements are important for clinicians.</li> <li>- 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.</li> <li>- Demonstrate your contribution to leadership in clinical settings by identifying what you will do to develop competence in managing services.</li> </ul>
<a href="#">Ensuring Development and Learning</a>	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.	<ul style="list-style-type: none"> <li>- Define performance management in the context of the individual.</li> <li>- Relate performance management to the formal systems of individual performance review, educational supervision and appraisal.</li> <li>- Identify the skills and techniques associated with conducting effective individual performance review.</li> <li>- Explain the role of mentoring, coaching and counselling in supporting development and improved performance.</li> <li>- Identify where poor performance or inappropriate behaviour calls for the use of formal measures to deal with the situation.</li> </ul>

Session	Description	Learning Outcomes
		<ul style="list-style-type: none"> <li>- Identify how managing performance relates to clinical leadership.</li> </ul>
<a href="#">Organisational Performance</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Describe the range of information that can be helpful in indicating performance.</li> <li>- Explain the formal mechanisms and approaches to organisational performance management in the NHS.</li> <li>- Analyse the information provided in a case study to identify key performance issues for a service and decide what actions may be necessary.</li> <li>- Consider how information about performance can be used to inform future plans.</li> <li>- Explore how performance is measured and managed in your own service.</li> <li>- Demonstrate your contribution to leadership by identifying appropriate performance indicators in your service.</li> </ul>
<a href="#">Introduction to CLCF: Improving Services</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Identify the four competence elements within this domain.</li> <li>- Explain why these elements are important for clinicians.</li> <li>- 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.</li> <li>- Demonstrate your contribution to leadership in clinical settings by identifying what you will do to develop competence in improving services.</li> </ul>
<a href="#">Introduction to Quality Improvement</a>	<p>This session introduces you to 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.</p>	<ul style="list-style-type: none"> <li>- Define the term quality improvement.</li> <li>- Explain your role as a clinician involved in quality improvement to others.</li> <li>- List the elements that make up a quality improvement approach, in particular the discipline of improvement.</li> <li>- Identify the key tools and approaches for each of the elements in the discipline of improvement.</li> <li>- Demonstrate your contribution to leadership in your clinical setting by identifying areas for improvement in your own service.</li> </ul>

Session	Description	Learning Outcomes
<a href="#">Quality Improvement and Patient Safety</a>	<p>This session explores the importance of patient safety and provide some practical tools for improvement. This session supports the development of leadership in clinical settings.</p>	<ul style="list-style-type: none"> <li>- Explain the link between quality improvement and safer patient care.</li> <li>- Describe the methods needed to undertake improvements to ensure patient safety and confidence.</li> <li>- Identify how and when process mapping can be used to analyse services.</li> <li>- Explain how patient and carer input can be obtained and used in service improvement.</li> <li>- State means of evaluating improvement and measuring the impact of changes.</li> <li>- Explain how quality improvement processes relate to the broader system.</li> <li>- Demonstrate your contribution to leadership by identifying changes in the way care is delivered in order to improve patient safety.</li> </ul>
<a href="#">Minimising Risk in Healthcare Organisations</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Define risk management generally and explain how it applies within the clinical context and to the concept of leadership.</li> <li>- Identify and critique current policies and protocols used locally to manage risk.</li> <li>- Describe and categorise potential sources of risk within your area of work.</li> <li>- Describe commonly used tools and techniques for managing risk.</li> <li>- Through consideration of a case study, demonstrate your contribution to leadership by identifying how risk can be systematically managed.</li> </ul>
<a href="#">Clinical Governance</a>	<p>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</p>	<ul style="list-style-type: none"> <li>- Explain how individual clinicians can use governance principles to improve the quality of their care.</li> <li>- Describe the essential components of a structured governance plan within a hospital directorate or GP practice.</li> <li>- Evaluate regional and national factors that impinge on local governance requirements.</li> </ul>



Session	Description	Learning Outcomes
	development of leadership in clinical settings.	<ul style="list-style-type: none"> <li>- Demonstrate how you contribute to the development of leadership by identifying how you would assure the quality of service for patients.</li> </ul>
<a href="#">Monitoring Systems of Care</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Describe the meaning of outcomes in the context of system wide clinical services.</li> <li>- State the mechanisms used to assess quality and outcomes.</li> <li>- Identify opportunities where systems of care might benefit from assessing the quality of provision and service.</li> <li>- Explain the steps that would be necessary to bring a more systematic approach to monitor the outcome of provision.</li> <li>- Develop your leadership by recommending appropriate outcome measures for your service.</li> </ul>
<a href="#">Introduction to CLCF: Setting Direction</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Identify the four competence elements within this domain.</li> <li>- Explain why these elements are important for clinicians.</li> <li>- 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.</li> <li>- Demonstrate your contribution to leadership in clinical settings by identifying what you will do to develop competence in setting direction.</li> </ul>
<a href="#">Successful Patient Outcomes</a>	<p>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.</p>	<ul style="list-style-type: none"> <li>- Identify how national programmes relate to local services.</li> <li>- Examine the type of data and information needed to measure patient outcomes.</li> <li>- Consider the use of patient outcomes information in planning practice and services.</li> <li>- Describe how results from national programmes on patient outcomes can be used constructively to influence individual practice.</li> <li>- Demonstrate your contribution to the development of leadership in your area of practice by identifying relevant national patient outcome measures.</li> </ul>

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

#### All resources

Session	Description	Learning Outcomes
<a href="#">Working with Others: Developing Networks</a>	This session will 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).	<ul style="list-style-type: none"> <li>- Identify opportunities where working with patients and colleagues in the clinical setting can bring added benefits.</li> <li>- Create opportunities to bring individuals and groups together to achieve goals.</li> <li>- Promote the sharing of information and resources.</li> <li>- Actively seek the views of others.</li> </ul>
<a href="#">Working with Others: Building and Maintaining Relationships</a>	The aim of this session is 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.	<ul style="list-style-type: none"> <li>- Listen to others and recognise different perspectives.</li> <li>- Empathise and take into account the needs and feelings of others.</li> <li>- Communicate effectively with individuals and groups, and act as a positive role model.</li> <li>- Gain and maintain the trust and support of colleagues.</li> </ul>
<a href="#">Working with Others: Working within Teams</a>	This session will support you in your team to deliver and improve services.	<ul style="list-style-type: none"> <li>- Have a clear sense of your role, responsibilities and purpose within the team.</li> <li>- Adopt a team approach, acknowledging and appreciating efforts, contributions and compromises.</li> <li>- Recognise the common purpose of the team and respect team decisions.</li> <li>- Lead a team, involving the right people at the right time.</li> </ul>

Session	Description	Learning Outcomes
<a href="#">Managing Services: Managing Performance</a>	<p>This session discusses why measuring performance is a key part of delivering high quality, effective and safe services. It helps you consider how to improve performance and give some ideas for how to take this forward.</p>	<ul style="list-style-type: none"> <li>- Analyse information from a range of sources about performance.</li> <li>- Take action to improve performance.</li> <li>- Take responsibility for tackling difficult issues.</li> <li>- Build learning from experience into future plans.</li> </ul>
<a href="#">Improving Services: Ensuring Patient Safety</a>	<p>This session provides information about minimising the risk to patient safety through deliverance of evidence-based practice within the healthcare environment. It discusses 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.</p>	<ul style="list-style-type: none"> <li>- Identify and quantify the risk to patients using information from a range of sources.</li> <li>- Use evidence, both positive and negative, to identify options.</li> <li>- Use systematic ways of assessing and minimising risk.</li> <li>- Monitor the effects and outcomes of change.</li> </ul>
<a href="#">Improving Services: Encouraging Improvement and Innovation</a>	<p>This session explores ways to support the creation of a climate of continuous service improvement.</p>	<ul style="list-style-type: none"> <li>- Question the status quo.</li> <li>- Act as a positive role model for innovation.</li> <li>- Encourage dialogue and debate with a wide range of people.</li> <li>- Develop creative solutions to transform services and care.</li> </ul>
<a href="#">Improving Services: Facilitating Transformation</a>	<p>This session looks at actively contributing to change processes that lead to improving healthcare.</p>	<ul style="list-style-type: none"> <li>- Model the expected change.</li> <li>- Articulate the need for change and its impact on people and services.</li> <li>- Promote changes leading to systems redesign.</li> <li>- Motivate and focus a group to accomplish change.</li> </ul>
<a href="#">Setting Direction: Identifying the Contexts for Change</a>	<p>This session helps you explore how to be aware of the range of factors to be taken into account when identifying the contexts for change.</p>	<ul style="list-style-type: none"> <li>- Demonstrate awareness of the political, social, technical, economic, organisational and professional environment.</li> <li>- Understand and interpret relevant legislation and accountability frameworks.</li> <li>- Anticipate and prepare for the future by scanning for ideas, best practice and emerging trends that will have an impact on health outcomes.</li> </ul>

Session	Description	Learning Outcomes
		- Develop and communicate aspirations.
<a href="#">Assertiveness in the Workplace</a>	Assertiveness is getting the attention and the 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. This module gives you the confidence to apply the skills of assertive behaviour in the workplace so benefiting yourself and your team.	<ul style="list-style-type: none"> <li>- Identify the difference between passive, aggressive and assertive behaviour.</li> <li>- Understand how assertive behaviour can get your desired outcome.</li> <li>- Understand the principles of being assertive. - Identify the importance of giving and receiving honest feedback.</li> <li>- Identify how to apply the skills of assertive behaviour in the workplace.</li> </ul>
<a href="#">Coaching Skills</a>	This module will 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.	<ul style="list-style-type: none"> <li>- Identify and understand the principles of coaching.</li> <li>- Understand how coaching can be used in the work context.</li> <li>- Be able to apply a simple model for coaching – GROW.</li> <li>- Know when and how to use coaching skills.</li> <li>- Be clear about the coach/coachee relationship.</li> </ul>
<a href="#">Coaching to Support Change</a>	This module looks at 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.	<ul style="list-style-type: none"> <li>- Understand how coaching can support staff through times of change.</li> <li>- Define workplace coaching and how it differs from other types of coaching.</li> <li>- Understand how workplace coaching will benefit the individual, the manager and the organisation.</li> <li>- Understand the process and benefits of three-way contracting.</li> </ul>
<a href="#">Dealing with Difficult People</a>	Dealing with difficult people is something we will all have to do at some time and no workplace is without them. This module uses a number of scenarios to introduce how you can deal more effectively with difficult people.	<ul style="list-style-type: none"> <li>- Recognise the common behaviours of a 'difficult' person.</li> <li>- Understand the reasons why dealing with difficult people should not be avoided.</li> <li>- Understand the LEAD model and how this can be a useful tool when dealing with difficult people.</li> <li>- Understand how dealing with difficult people professionally and appropriately can have a positive outcome for all concerned.</li> </ul>
<a href="#">Empowering the Manager – Managing Upwards</a>	Managing upwards involves a range of skills in order to get what we need from our	- Identify a range of common work styles and understand how to deal with them.

Session	Description	Learning Outcomes
	manager, whilst keeping them happy too. Sometimes it's necessary to say no to our manager and we must do so assertively without causing any ill-feeling. This module covers three specific skills of influence, negotiation and delegation to help with the process of managing upwards.	<ul style="list-style-type: none"> <li>- Be able to receive delegated work more clearly, with explicit measures of time and quality expectations.</li> <li>- Identify skills you already have that can be utilised in managing upwards.</li> <li>- Plan to say 'no' without upsetting the boss.</li> <li>- Self-awareness – what can you do differently to change the results you get with your manager.</li> </ul>
<a href="#">Performance Management</a>	This module 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.	<ul style="list-style-type: none"> <li>- Identify personal barriers to dealing with performance problems.</li> <li>- Set clear goals for yourself and your team members.</li> <li>- Be more effective in giving reward and encouragement for a job well done.</li> <li>- Identify and differentiate between performance and behaviour issues within the workplace.</li> </ul>
<a href="#">The Situational Leader</a>	This module introduces theories and concepts you can use to help you become a more effective leader and manager.	<ul style="list-style-type: none"> <li>- Recognise how different situations will require different management styles.</li> <li>- Understand why consistent leadership does not necessarily mean treating All staff exactly the same.</li> <li>- Recognise different leadership styles and how a combination of these styles is more effective than just choosing one.</li> </ul>

More learning sessions can be found on the [eLfh Leadership Foundations e-learning programme webpage](#).

### Other external resources:

- [NICOR National Cardiac Audit Programme \(NCAP\) Annual Report 2021](#)

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