



UNIVERSITY OF
CAMBRIDGE

Institute of Continuing Education

Postgraduate Certificate in Advanced Clinical Practice (Pre-Hospital Emergency Medicine)

2019-2020

Course code: 1920PCRA02

COURSE GUIDE

University of Cambridge Institute of Continuing Education, Madingley Hall, Cambridge, CB23 8AQ
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Introduction

The Postgraduate Certificate (PgCert) in Advanced Clinical Practice (Pre-Hospital Emergency Medicine) is a University of Cambridge award offered by the Institute of Continuing Education (ICE). It has been designed collaboratively with the Department of Pre-hospital and Retrieval Medicine at Cambridge University Hospitals NHS Foundation Trust, the Faculty of Pre-Hospital Care of the Royal College of Surgeons of Edinburgh, the College of Paramedics (CoP) and the Intercollegiate Board for Training in Pre-Hospital Emergency Medicine.

Pre-Hospital Emergency Medicine (PHEM) is the area of clinical practice focused on immediate emergency care at the scene and in transit to hospital for persons critically ill or injured. There has historically been a wide range of providers across the spectrum of healthcare professions. This new innovative academic programme complements the national development of PHEM as a specialist area of medical practice and the work of the CoP in developing post-registration career pathways. It provides Paramedics and Nurses access to a rigorous academic programme that allows them to undertake extended breadth and depth of study and develop their theoretical understanding and clinical practice in an equivalent way to medical professionals. The course is part of a wider programme of work which aims to:

- Develop a postgraduate programme which is open to healthcare professionals (Paramedics and Nurses) who are eligible to undertake accreditation as an Advanced PHEM practitioner.
- Contribute to shaping regional and national perspectives relating to continuing professional development of advanced clinical practitioners.
- Meet the College of Paramedics' post registration career framework aspirations related to PHEM practice.
- Develop a cohort of Advanced Practitioners possessing a depth and breadth of knowledge and understanding within the specialist field of PHEM.
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The PgCert in Advanced Clinical Practice (PHEM) is a 1 year part-time Masters level programme resulting in 60 FHEQ (Framework for Higher Education Qualifications) level 7 credits and a University of Cambridge Award.¹ It builds upon expertise and experience of practitioners and academics involved in PHEM. It will provide development in the areas of theoretical understanding and clinical practice required to effectively perform an Advance Practitioner role. The programme complements clinical training in PHEM and places a strong emphasis upon learning in the clinical environment and application to practice. An expert clinical and academic team provide students with exposure to learning opportunities in a high-quality, consistent, and reproducible manner. The key aims of the programme are:

1. Develop knowledge and skills related to applied anatomy, physiology and pharmacology in the context of pre-hospital management of the critically ill or injured.
2. Develop clinical skills for the pre-hospital assessment and management of critical illness or injury.
3. Develop specialist knowledge of human factors and professional behaviours which impact upon the delivery of PHEM.
4. Develop a flexible and analytical approach to advanced care delivery and leadership across strategic and operational aspects of PHEM practice
5. Promote scholarship in PHEM practice.
6. Facilitate development of a cadre of Advanced and, with the completion of additional complementary courses, Consultant level practitioners who are able to fulfil the

¹ For further information about academic credit please see www.ice.cam.ac.uk/studying-with-us/information-for-students/qualifications-that-we-offer

Consultant (Level 8) practitioner accreditation requirements of the Faculty of Pre-hospital Care.

Structure of the PgCert

This PgCert programme comprises three modules providing a total of approximately 140 contact hours with additional intra and inter modular reflection, study and assignment work. Much of this will be conducted within a PHEM clinical practice setting and supported by a virtual learning environment (VLE).

The three modules are:

1. Advanced Clinical Assessment
2. Clinical Leadership and Decision Making
3. Pharmacology and Therapeutics for PHEM

You will acquire through the programme a grounding in each of these areas, which will be backed up by an enhanced knowledge of the available evidence base and guidelines for current best practice. The teaching will also be experiential and is designed to expose you not just to theory but to a demonstration of how that theory can be applied.

The syllabus of each module and detail of the assessment framework are included in this document.

Transferable skills for further study and employability

- The development of enhanced clinical skills across the spectrum of PHEM clinical practice
- The capacity for independent thought and judgement
- The development of independent learning, study and time management skills
- The deployment of skills in critical reasoning
- The development of competence in using IT to support one's work
- The ability to work with others, productively and equitably
- The qualities necessary for employment requiring the exercise of some personal responsibility and the demonstration of high levels of motivation and personal commitment through part-time study

Study hours

The award of academic credit is a means of quantifying and recognising learning. Within the UK, one credit notionally represents 10 hours of learning.² Each of the modules in the PgCert Programme attracts 20 credits so students should expect to need to study for approximately 200 hours in total to complete each module successfully. However, it is recognised that students study at different paces and use a variety of approaches, so this is a recommendation, rather than a hard-and-fast calculation.

Teaching staff

Course Director

Mr Dan Cody, Consultant Paramedic & Clinical Director, Magpas Air Ambulance

Lead Tutor

Dr Rod Mackenzie, Consultant in Emergency Medicine and Pre-hospital Emergency Medicine, Cambridge University Hospitals

Tutor panel

Dr Anne Booth, Consultant in Anaesthetics and Pre-hospital Emergency Medicine, Cambridge University Hospitals

Dr Adam Chesters, Consultant in Emergency Medicine and Pre-hospital Emergency Medicine, Cambridge University Hospitals

² 'Academic credit in higher education in England – an introduction'. The Quality Assurance Agency for Higher Education, 2009

Dr Timothy Edwards, Consultant Paramedic, London Ambulance Service

Dr Sarah Hazleman, Consultant in Emergency Medicine and Pre-hospital Emergency Medicine, Cambridge University Hospitals

Dr Nathan Howes, Consultant in Emergency Medicine and Pre-hospital Emergency Medicine, Cambridge University Hospitals

Dr Simon Lewis, Consultant in Emergency Medicine and Pre-hospital Emergency Medicine, Cambridge University Hospitals

Dr Maria Smith, Consultant in Emergency Medicine and Pre-hospital Emergency Medicine, Cambridge University Hospitals

Dr Lee Soomaroo, Consultant in Emergency Medicine and Pre-hospital Emergency Medicine, Cambridge University Hospitals

Administrative staff

Academic Programme Manager: Gillian Barclay, Institute of Continuing Education, University of Cambridge, Madingley Hall, Madingley, Cambridge, CB23 8AQ, Telephone 01223 760063 Email: gillian.barclay@cam.ac.uk

Programme Administrator: Liz Webb, Institute of Continuing Education, University of Cambridge, Madingley Hall, Madingley, Cambridge, CB23 8AQ, Telephone 01223 746408 Email: liz.webb@ice.cam.ac.uk

Venue

Madingley Hall is an historic Tudor mansion on the outskirts of Cambridge and the venue for all classes unless otherwise specified. The Hall is situated in the village of Madingley, three miles west of Cambridge with easy access from the M11 and the A14. Full directions are given at www.ice.cam.ac.uk/directions

Contact details of ICE

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Please also refer to the 'information for students' section on ICE's website www.ice.cam.ac.uk/studying-with-us/information-for-students and the 2019-20 Student Handbook for award-bearing courses for further information and guidance relating to all aspects of the course including study skills, assignments, assessment and moderation. The Course Information and Help and Guidance section of the ICE VLE will also contain valuable information specific to your course.

Information correct as at 9th April 2019

Syllabus for Module 1

Michaelmas term 2019

Advanced Clinical Assessment

Start Date:	Wednesday 18 th September 2019 (pre-reading)
End Date:	Friday 13 th December 2019
Teaching Dates:	25/09/2019 (Wednesday) 26/09/2019 (Thursday) 06/11/2019 (Wednesday) 07/11/2019 (Thursday) 11/12/2019 (Wednesday) 12/12/2019 (Thursday)
Assessment Date:	Friday 20/12/2019 (practical OSPE and written exam)
Venue:	Madingley Hall, Madingley, Cambridge, CB23 8AQ

Aims

The Advanced Clinical Assessment module aims to provide participants with an opportunity to refresh and enhance their basic clinical assessment skills and their understanding of applied physiology, anatomy and therapeutics in the critically ill or injured patient.

The module is based around common acute presentations and conditions that require identification of high risk clinical symptoms and signs related to organ and system failure. The focus of the module is understanding clinical examination and on developing the ability to assimilate findings from clinical examination to make diagnoses and provide treatment.

Module content

The module includes:

- 1.1 Clinical method (history and examination techniques) as applied to the critically ill or injured patient of all ages.
- 1.2 Applied anatomy in relation to the most frequent acute presentations and emergency interventions for critically ill or injured patients of all ages.
- 1.3 Applied physiology in relation to the most frequent acute presentations and the effects of emergency treatment.
- 1.4 Use of diagnostic equipment as an adjunct to clinical assessment.

The module will include a refresher of core clinical practice and the opportunity, through study and taught components, to develop a systems based approach to assessment. The participants will be taken on a journey through a range of common PHEM clinical presentations, the pathophysiology of disease, the applied anatomy and physiology of critical illness and injury, patient assessment and the relevant evidence-based and best practice management strategies. It offers the opportunity for students to reflect on their own practice and challenge and critically appraise assessment and management options.

Presentation of the module

The module will be delivered through a combination of directed reading, personal study and 6 contact days, totaling 48 hours of teaching and supported by a virtual learning environment (VLE). The module will start with VLE delivered pre-reading and study revising core principles and practices in clinical interview and patient assessment.

The study days will be themed and involve a series of interactive facilitated case based discussions (CBDs) that will explore clinical presentations and group workshops that will introduce students to the associated clinical assessment and technical skills. Each study day will be preceded by directed study and reading on the VLE to support preparation and introduce any new learning and concepts. The study days will be followed by further directed study and reading in order to consolidate learning and growth of knowledge.

The programme requires a commitment to the reading and pre-class preparation, including participation in VLE led activity.

Module Structure

Each of the pairs of contact days will follow a standard format:

Michaelmas Term 2019	
25 September, 6 November, 11 December	
Time	Event
09:30	Registration
10:00	Introduction and overview
10:30	Case Based Discussion 1/7/13
11:15	Case Based Discussion 2/8/14
12:00	Case Based Discussion 3/9/15
12:45	Summary of CBD
13:00	Lunch
13:45	Workshop 1/9/17
14:30	Workshop 2/10/18
15:15	Break
15:30	Workshop 3/11/19
16:15	Workshop 4/12/20
17:00	Q&A
17:30	Summary, feedback and debrief
18:00	Close

Michaelmas Term 2019	
26 September, 7 November, 12 December	
Time	Event
08:00	Introduction and overview
08:30	Case Based Discussion 4/10/16
09:15	Case Based Discussion 5/11/17
10:00	Break
10:15	Case Based Discussion 6/12/18
11:00	Summary of CBD
11:15	Workshop 5/13/21
12:00	Workshop 6/14/22
12:45	Lunch
13:30	Workshop 7/15/23
14:15	Workshop 8/16/24
15:00	Q&A
15:30	Summary, feedback and debrief
16:00	Close

Each study day will be themed around a range of clinical presentations:

25 September	Respiratory failure
CBD 1: Acute asthma CBD 2: Exacerbation of chronic lung disease CBD 3: Thoracic trauma Workshop 1: Clinical examination of the respiratory system Workshop 2: Applied physiology - Non-invasive ventilation Workshop 3: Differential diagnosis of respiratory distress Workshop 4: Applied anatomy – Ultrasound of the chest	
26 September	Infection
CBD10: Meningococcal disease CBD 11: Sepsis CBD 12: Encephalomyelitis Workshop: Differential diagnosis of pyrexial illness Workshop: Applied pharmacology of antimicrobial agents Workshop: The general clinical examination Workshop: Differential diagnosis of sepsis	
6 November	Gastrointestinal (GI) conditions
CBD 4: Upper GI haemorrhage CBD 5: Acute liver failure CBD 6: Blunt abdominal trauma Workshop: Clinical examination of the gastro-intestinal system Workshop: Differential diagnosis of gastro-enteritis Workshop: Differential diagnosis of the acute abdomen Workshop: Applied anatomy – Focused Abdominal Sonography	
7 November	Cardiovascular failure
CBD 13: Myocardial infarction and cardiogenic shock CBD 14: Acute decompensated heart failure CBD 15: Arrhythmia Workshop: Applied anatomy – Ultrasound of the heart Workshop: Clinical examination of the cardiovascular system Workshop: Applied physiology of the conducting system Workshop: Differential diagnosis of chest pain	
11 December	Neurological failure
7: Spinal cord injury CBD 8: Traumatic brain injury CBD 9: Seizures Workshop: Clinical examination of the neurological system Workshop: Differential diagnosis of transient loss of consciousness Workshop: Applied physiology of neuroprotective strategies Workshop: Applied anatomy – Spinal cord syndromes	
12 December	Metabolic failure
CBD 16: Diabetic Ketoacidosis CBD 17: Poisoning CBD 18: Acute kidney injury Workshop: Applied physiology of diabetic emergencies Workshop: Applied pharmacology of intravenous fluids Workshop: The role of near patient testing in PHEM Workshop: Toxidromes – toxicological differential diagnosis	

Outcomes

By the end of the module

- Participants should have an in depth understanding relating to the pathophysiology, applied anatomy and physiology, clinical assessment and management of common presentations of the critically ill or injured.
- They should demonstrate the effective interview and assessment of an undifferentiated patient presentation and the formulation of an appropriate management plan.
- They should demonstrate reflection on their own practice and critical appraisal of current evidence and best practice guidelines.

Assessment

The assessment consists of both formative and summative components:

1. Formative:
 - (a) Ongoing completion of a reflective learning journal.
2. Summative:
 - (a) A series of objective structured clinical examinations (OSCEs) of technical and non-technical skills.
 - (b) A written examination consisting of 50 questions . The questions will cover the breadth of the taught syllabus from this module focusing on underpinning knowledge.

OSCEs and the written exam will be conducted on 20th December 2019 at Madingley Hall. Participants will be allocated time slots.

Reading and resource list

Books

Author / editor	Year of publication	Book title OR chapter in book, page numbers & book title and editors	Publisher and place of publication
Douglas G Nicol F Robertson C	2013 (13 th Edition)	MacLeod's Clinical Examination	Churchill Livingstone
Marieb E Hoehn K	2015 (10 th Edition)	Human Anatomy & Physiology (Global Edition) Chapter/pages tbc	Pearson: San Francisco.

Guidelines and papers

Author / editor	Year of publication	Title	Publisher and place of publication
National Institute of Clinical Excellence (NICE)	2010 (updated 2016)	CG95: <u>Chest pain of recent onset: assessment and diagnosis [online]</u>	
National Institute of Clinical Excellence (NICE)	2014	CG187: <u>Acute heart failure: diagnosis and management</u> CG187: <u>Acute heart failure: diagnosis and management</u>	

National Institute of Clinical Excellence (NICE)	2014	CG180: <u>Atrial fibrillation: management</u>	
British Thoracic Society	2017	<u>British guideline on the management of asthma</u>	
National Institute of Clinical Excellence (NICE)	2010	CG101: <u>Chronic obstructive pulmonary disease in over 16s: diagnosis and management</u>	
National Institute of Clinical Excellence (NICE)	2012 (updated 2016)	CG141: Acute upper gastrointestinal bleeding in over 16s: management	
National Institute of Clinical Excellence (NICE)	2010 (updated 2017)	CG100: <u>Alcohol-use disorders: diagnosis and management of physical complications</u>	
National Institute of Clinical Excellence (NICE)	2010 (updated 2014)	CG109: Transient loss of consciousness ('blackouts') in over 16s.	
National Institute of Clinical Excellence (NICE)	2010 (updated 2015)	CG 102: <u>Meningitis (bacterial) and meningococcal septicaemia in under 16s: recognition, diagnosis and management</u>	
National Institute of Clinical Excellence (NICE)	2016 (updated 2017)	NG51: Sepsis: recognition, diagnosis and early management	
National Institute of Clinical Excellence (NICE)	2016 (updated 2017)	CG160: Fever in under 5s: assessment and initial management	

Syllabus for second module

Lent term 2020

Clinical Leadership & Advanced Decision Making

Start Date:	Monday 15 th December 2019 (pre-reading)
End Date:	Friday 27 th March 2020
Teaching Dates:	15/01/2020 (Wednesday) 16/01/2020 (Thursday) 26/02/2020 (Wednesday) 27/02/2020 (Thursday) 18/03/2020 (Wednesday) 19/03/2020 (Thursday)
Assessment Date:	Thursday 26 th March (practical OSPE) Friday 3 rd April (submission deadline)
Venue:	Madingley Hall, Madingley, Cambridge, CB23 8AQ

Aims

The Clinical Leadership and Advanced Decision Making module aims to provide participants with an opportunity to become a better leader in their day-to-day operational role and enhance their leadership and decision making basic skills in order to navigate the complex healthcare environment and optimise the care of their patients.

Module content

This module focuses on the knowledge, skills and behaviours (non-technical skills) to enable participants to operate as autonomous critical care practitioners either alone or within pre-hospital critical care teams and support the continuous quality improvement and management of the service. It includes:

- 2.1 Effective clinical decision making.
- 2.2 Healthcare leadership.
- 2.3 Team resource management.
- 2.4 Applying evidence to clinical practice.
- 2.5 Application of legal and ethical considerations.
- 2.6 Quality improvement in healthcare

The module

The module will include an introduction to core principles of leadership at an operational and tactical level within a healthcare environment. The module will develop the participants existing knowledge of operational management, human factors and team resource management and their experience in maintaining a safe operational environment. The module will give an insight into the complex legal and ethical considerations of performing

in an advanced practice role. The students will explore decision making and how to develop these skills in themselves.

Presentation of the module

The module will be delivered through a combination of 6 contact days, totaling 48 hours of teaching and supported by the VLE. The module will start with VLE delivered pre-reading and study introducing students to the content of the module.

The contact days will involve a series of lectures, interactive case based discussions and small group workshops. Each study day will be preceded by directed study and reading on the VLE to support preparation and introduce new learning and concepts. The study days will be followed by further directed study and reading in order to consolidate learning and growth of knowledge.

Module Structure

Each of the pairs of contact days will follow a standard format:

Lent Term 2020	
15 Jan, 26 Feb, 18 March 2020	
Time	Event
09:30	Registration
10:00	Introduction and overview
10:30	Interactive lecture 1/7/13
11:15	Interactive lecture 2/8/14
12:00	Interactive lecture 3/9/15
12:45	Summary of interactive lectures
13:00	Lunch
13:45	Workshop 1/9/17
14:30	Workshop 2/10/18
15:15	Break
15:30	Workshop 3/11/19
16:15	Workshop 4/12/20
17:00	Q&A
17:30	Summary, feedback and debrief
18:00	Close

Lent Term 2020	
16 Jan, 27 Feb, 19 March 2020	
Time	Event
08:00	Introduction and overview
08:30	Interactive lecture 4/10/16
09:15	Interactive lecture 5/11/17
10:00	Break
10:15	Interactive lecture 6/12/18
11:00	Summary of interactive lectures
11:15	Workshop 5/13/21
12:00	Workshop 6/14/22
12:45	Lunch
13:30	Workshop 7/15/23
14:15	Workshop 8/16/24
15:00	Q&A
15:30	Summary, feedback and debrief
16:00	Close

Each study day will be themed around a range of operational leadership challenges

15 Jan - Effective clinical decision making.
IL 1: The principles of clinical decision making IL 2: Theoretical models of clinical decision making IL 3: Follies and fallacies in medicine Workshop 1: Decision making challenges - End of life decision making Workshop 2: Decision making challenges - Triage decision making Workshop 3: Sharing decision making with service users Workshop 4: When a diagnosis doesn't matter – assessment based decisions
16 Jan - Healthcare leadership.
IL 4: Introduction to models of healthcare leadership IL 5: Theories of individual and team leadership IL 6: Emotional intelligence, mental toughness and psycho-social resilience Workshop 1: Mapping against the Healthcare Leadership Model Workshop 2: Developing documents that guide practice Workshop 3: Preparing and delivering briefings Workshop 4: Dynamic risk assessment and operational leadership
26 Feb - Team resource management.
IL 7: Clinical human factors in perspective IL 8: Introduction to error theory IL 9: Introduction to teamwork Workshop 1: The TeamSTEPPS programme Workshop 2: Countermeasures to the Dirty Dozen Workshop 3: Advocacy and assertiveness Workshop 4: Forming and maintaining flash teams
27 Feb - Applying evidence to clinical practice.
IL 10: Introduction to the practice of evidence based medicine IL 11: Developing clinical guidelines IL 12: Introduction to diagnostics Workshop 1: Defining the clinical questions: PICO or PIRT Workshop 2: Finding the evidence Workshop 3: Navigating study designs Workshop 4: Critical appraisal
18 March - Application of legal and ethical considerations.
IL 13: Best interests, autonomy and rights IL 14: Duty of care and negligence IL 15: The regulatory and legal framework for the advanced practitioner Workshop 1: Clinical negligence Workshop 2: Writing statements and giving evidence Workshop 3: Ethical decision making Workshop 4: Considerations for children
19 March – Supporting clinical activity
IL 16: Principles of supervision in practice IL 17: Principles of giving remote advice IL 18: Effective debriefing in clinical practice Workshop 1: The role of work place based assessments Workshop 2: Remote advice scenarios Workshop 3: Debriefing a challenging case Workshop 4: Difficult conversations

Outcomes

By the end of the module

- Evaluate and selectively apply context specific clinical leadership strategies in a range of PHEM settings.
- Demonstrate the structured application of situationally appropriate human factors critical analysis, based upon a repertoire of options.

- Analyse epidemiology pertinent to PHEM presentations across the life-span, applying appropriate statistical interpretation of data.
- Understand and apply the principles of clinical governance relevant to PHEM provision.
- Acquire an enhanced awareness of collaborative inter-agency working applied in the context of the wider healthcare network.
- Assimilate complex sources of information, to apply theoretical frameworks which formulate appropriate clinical decisions in the PHEM environment.

Assessment

The assessment consists of both formative and summative components:

1. Formative:
 - (a) Ongoing completion of a reflective learning journal.
2. Summative:
 - (a) A series of objective structured practical examinations (OSPEs) of non-technical skills.
 - (b) A 500 word reflective account regarding one aspect of the taught syllabus detailing what you have learnt and how this may influence your future practice.
 - (c) A 2500 word assignment critically appraising the evidence relating to either (i) the role of human factors in improving patient safety or (ii) the role of effective debriefing in clinical practice.

OSPEs will be conducted on 26th March 2020 at Madingley Hall. Students will be allocated time slots. The submission date for the written assignment is midday Friday 3rd April 2020

Reading and resource list

Author / editor	Year of publication	Book title OR chapter in book, page numbers & book title and editors	Publisher and place of publication
James Reason	1991	<i>Human Error</i>	Cambridge University Press, Cambridge
Sidney Decker	2014 (3 rd Ed)	<i>A Field Guide to Human Error</i>	Routledge,
James Reason and Alan Hobbs	2003	<i>Managing Maintenance Error: A Practical Guide</i>	CRC Press
Sidney Decker	2012 (2 nd Ed)	<i>Just Culture</i>	Routledge,
Health and Care Professions Council	2014	<i>Standards of Proficiency for Paramedics</i>	Health and Care Professions Council, London
Narinder Gosall and Gurpal Gosall	2009	<i>The Doctor's Guide to Critical Appraisal (2nd Ed)</i>	PasTest
NHS Leadership Academy	2013	<i>Healthcare Leadership Model</i>	NHS Leadership Academy, London
	2005	<i>Mental Capacity Act</i>	

Syllabus for third module

Easter term 2020

Pharmacology & Therapeutics for PHEM

Start Date:	Monday 8 th June 2020 (pre-reading)
End Date:	Friday 10 th July 2020
Teaching Dates:	15/04/2020 (Wednesday) 16/04/2020 (Thursday) 06/05/2020 (Wednesday) 07/05/2020 (Thursday) 10/06/2020 (Wednesday) 11/06/2020 (Thursday)
Assessment Date:	Wednesday 1 st July 2020 (written exam) Wednesday 8 th July 2020 (submission deadline)
Venue:	Madingley Hall, Madingley, Cambridge, CB23 8AQ

Aims

- Produce competent non-medical prescribers who can provide safe and effective prescribing to meet the needs of patients.
- Develop a deep understanding of common medicines used and encountered in PHEM including appropriate use and applied pharmacology.
- Have a deep appreciation of the legal and professional responsibilities relating to medicines and prescribing.

Module content

This module focuses on the knowledge, skills and behaviours to enable a healthcare professional to prescribe and administer medicines and blood products for both organ and system support and to treat critically ill or injured patients of all ages. It includes:

3.1 Applied pharmacology and therapeutics in PHEM.

3.2 Law, ethics and risk assessment in relation to the prescribing or administration of medicines & other therapeutic interventions.

3.3 Using clinical assessment to formulate care plans.

3.4 Monitoring the response to administration of medicines and other therapeutic interventions.

3.5 Adverse incidents and drug errors.

3.6 Use of devices for the administration of medicines & other therapeutic interventions.

3.7 Record keeping and documentation in relation to prescribing and administration of medicines.

The module

Building on the students understanding of clinical assessment and advanced decision making obtained within the first two modules, the module will include an introduction to the fundamental principles to allow students to safely prescribe, supply and administer medicines in the PHEM environment. The module will cover the law and ethics relevant to medicines and prescribing in the PHEM environment to give students a deeper understanding of safe and responsible practices. The module will develop the students knowledge of applied pharmacology for common medicines encountered and administered in the PHEM environment, combining with their existing knowledge of clinical assessment and common presentations, ensuring they assimilate information and make appropriate prescribing decisions.

Presentation of the module

The module will be delivered through a combination of 6 contact days, totaling 48 hours of teaching and supported by the VLE. The module will start with VLE delivered pre-reading and study introducing students to the content of the module.

The contact days will be themed and involve a range of lectures, interactive case based discussions, small group workshops and simulated patient encounters. Each study day will be preceded by directed study and reading on the VLE to support preparation and introduce new learning and concepts. The study days will be followed by further directed study and reading in order to consolidate learning and growth of knowledge.

Course Structure

15 April – Legal framework for prescribing
IL1: Introduction to prescribing IL2: The law and medicines IL3: Controlled drugs Workshop 1: Documentation and record keeping Workshop 2: Clinical management plans Workshop 3: Patient Group Directives (PGDs)
16 April – Pharmacology 1
IL 4: Basics of pharmacology 1 IL 5: Basics of pharmacology 2 IL 6: Bronchodilators & steroids Workshop 4: Ethical decision making in prescribing/administering Workshop 5: Using clinical assessment to inform prescribing/administering decisions Workshop 6: Using point of care testing to inform prescribing/administering decisions Workshop 6:
6 May – Pharmacology 2
IL 7: Analgesia and Anaesthesia IL 8: Neuromuscular Blockade IL 9: Local Anaesthesia Workshop 7: Providing effective analgesia Workshop 8: Regional anaesthesia Workshop 9: Providing Safe Sedation
7 May – Pharmacology 3
IL 10: Anti-microbials

IL 11: Thrombolytics and anti-platelets IL 12: Anti-arrhythmics Workshop 10: Methods of administration Workshop 11: Adverse reactions and drug errors Workshop 12: Monitoring response to medicines
10 June – Pharmacology 4
IL 13: Anti-convulsants IL 14: Anti-psychotics IL 15: Anti-emetics Workshop 13: Use of checklists and aide-memoires Workshop 14: Pharmacological management of Acute Behavioural Disturbance Workshop 15: Drug calculations
11 June – Pharmacology 5 & therapeutics
IL 16: Fluids and electrolytes IL 17: Blood products and adjunctive therapies IL 18: Vasoactive drugs Workshop 16: Infusion pumps and syringe drivers Workshop 17: Administering blood products Workshop 18: Using infusions

Outcomes

By the end of the module

- Critically evaluate the pharmacology of therapeutic interventions applied to prescribing practice and/or medicines management in the PHEM environment.
- Demonstrate knowledge and understanding of the legal and ethical framework surrounding prescribing and/or medicines management.
- Apply comprehensive knowledge and understanding of pharmacology and clinical sciences to demonstrate safe and effective practice across the lifespan.
- Meet relevant professional and regulatory standards which enable application and practice under relevant PHEM scope of practices.
- Develop review and reflect upon current practice which enables the determination of skills, knowledge and attitudes to successfully and effectively autonomously administer pharmacological intervention.

Assessment

The assessment consists of both formative and summative components:

1. Formative:
 - (a) Ongoing completion of a reflective learning journal.
2. Summative:
 - (a) A written examination consisting of 50 questions . The questions will cover the breadth of the taught syllabus from this module focusing on underpinning knowledge.
 - (b) A written examination consisting of 20 drug calculations.
 - (c) Expanded case studies – two structured and detailed 1500 word case studies focusing on the administration of medicines in relation to any two of the following clinical presentations (one case study per presentation):
 - Acute respiratory failure
 - Acute myocardial infarction
 - Acute arrhythmia

- Acute abdomen
- Transient loss of consciousness
- Seizures
- Sepsis
- Poisoning

Each case study should summarise an understanding of the applied pathophysiology of the selected clinical presentation, rationale for the selected therapeutic intervention, demonstrate a deep understanding of the applied pharmacology, discuss the risks and briefly critique the role of the chosen intervention.

The following formatting should be applied:

- A cover page with the name of the applicant and a statement of word count, excluding titles, figures, tables and legends should be prepared for each case study.
- English language
- A4 paper
- Portrait format
- One and a half-spaced type
- Single or double sided printing
- Sequential numbering on each page
- Text should be Arial 14 point for headings, 12 point for subheadings (both in bold) and 11 point for the body
- 3 cm left hand margin and a 2 cm right hand margin
- Abbreviations should be defined the first time they are used
- SI units should be used throughout
- A superscript number should be inserted in the text at the point where a source of information is referred to or cited. A consecutive number should be allocated to each source as it is referred to for the first time. Use superscript numerals *outside* periods and commas and *inside* colons and semicolons.
- When more than 2 references are cited at a given place in the manuscript, use hyphens to join the first and last numbers of a closed series; use commas without space to separate other parts of a multiple citation.
- References should be in Vancouver style and listed numerically at the end of the body of work (single line spacing may be used). Journal titles are to be abbreviated.

The cases should use the following format:

- (i) Title - informs the reader of the theme and situation.
- (ii) Introduction - explains succinctly why the case has been chosen and how it relates to the module.
- (iii) Clinical description - succinctly and anonymously describes relevant aspects of clinical care and overall management of the case together with the outcome.
- (iv) Discussion - analyses the important learning points of the case, demonstrating the use of up to date and relevant information on the subject. Recognising limitations of the review.
- (v) Conclusion – a summary of how the learning points from this case will inform the clinician's future activity.
- (vi) References - in Vancouver style, including at least four but no more than ten relevant references considered *essential* reading.

If photographic or radiological images, or equivalent, are used to illustrate the expanded case summary, care must be taken to ensure that they are (a) effectively anonymised or, (b) where they relate to a specific patient or show identifiable

features of patients (whether the focus of the case study or not) have been included with the full informed consent of the patient.

Case studies will be assessed against 5 domains according to the case study structure described above. These domains are (1) Title and introduction, (2) Clinical description, (3) Discussion, (4) Conclusion, (5) References.

The maximum attainable total for a case study is 25 marks. Each case study must achieve a score of 15 or above.

The written exam will be conducted on 1 July 2020 at Madingley Hall.

The submission date for written assignments will be midday on the 7 July 2020 December 2018.

Reading and resource list

This will be placed in the VLE in advance of this module to ensure that all reading accurately reflects the current legislative position at the time of course delivery.

TIMETABLE

Michaelmas 2019	
Advanced Clinical Assessment in PHEM	
Day schools	
	25/09/2019 (Wednesday) 26/09/2019 (Thursday)
	06/11/2019 (Wednesday) 07/11/2019 (Thursday)
	11/12/2019 (Wednesday) 12/12/2019 (Thursday)
Assessment	Friday 20 th December 2019 practical OSPE and written exam
Lent 2020	
Clinical Leadership & Advanced Decision Making in PHEM	
Day schools	
	15/01/2020 (Wednesday) 16/01/2020 (Thursday)
	26/02/2020 (Wednesday) 27/02/2020 (Thursday)
	18/03/2020 (Wednesday) 19/03/2020 (Thursday)
Assessment	Thursday 26th March (practical OSPE) Friday 3rd April (submission deadline)
Easter 2020	
Pharmacology for PHEM	
Day schools	
	15/04/2020 (Wednesday) 16/04/2020 (Thursday)
	06/05/2020 (Wednesday) 07/05/2020 (Thursday)
	10/06/2020 (Wednesday) 11/06/2020 (Thursday)
Assessment	Wednesday 1st July 2020 (written exam) Wednesday 8th July 2020 (submission deadline)

Assignment submission dates are normally 3 weeks after final teaching session of term.

Whilst every effort is made to avoid changes to this programme, published details may be altered without notice at any time. The Institute reserves the right to withdraw or amend any part of this programme without prior notice.

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