

Module Title	Acute Serious Illnesses and Traumatic Conditions in Primary Care				
Module Code	FMED-514				
Module Type	Required				
Level	2 nd Cycle				
Year / Semester	1 / 2				
Teacher's Name	Dr Anastasios Bagourdis, Dr Aristomenis Tourvas				
ECTS Credits	7.5	Lectures	19	Interactive learning activities	21
Module Purpose and Objectives	<p>The main objectives of the module are to:</p> <p><i>Hyperthermia, heat exhaustion, heat stroke</i></p> <ul style="list-style-type: none"> • Define exertional, non-exertional heat stroke. • Describe commonest aetiologies / epidemiology. • Describe basic pathophysiology. • List relevant presenting symptoms and clinical signs. • Identify the diagnosis and evaluate the differential diagnoses. • Identify the patient with Hyperthermia symptoms. • Carry out rapid assessment of clinical condition. • Demonstrate basic treatment on the ABC algorithm. • Identify and apply basic management of main complications (rhabdomyolysis, acute kidney and/or liver failure, complications from the C.N.S). • Name criteria for referral (Red flags). • Apply secondary prevention. <p>Acute Neurological conditions (Stroke, TIA, Status epilepticus and Syncope)</p> <ul style="list-style-type: none"> • Describe commonest aetiologies and epidemiology for Stroke, TIA, Status Epilepticus, and Syncope. • Identify relevant presenting symptoms and clinical signs depending on aetiologies. • Describe Atrial fibrillation as a risk factor for stroke. • Identify the diagnosis and evaluate the differential diagnoses. • Identify the patient with acute neurological symptoms (Stroke, TIA, Status Epilepticus and Syncope). • Carry out rapid assessment of the condition based on algorithms (Fast, Rosier, Abcd2 score, G.C.S) and identify those at high risk. • Evaluate when to perform imaging and other investigations (Indications and timeframe). • Apply basic pharmacological interventions and describe their timeframe. • Apply secondary prevention. • Evaluate Atrial fibrillation as a risk factor for stroke. • Calculate CHA₂DS₂-VASc, evaluate indication for anticoagulation, rate and rhythm control strategies). 				

Drug overdose

- Define Paracetamol overdose, dose and timeframe for N-acetylcysteine treatment (oral and IV regimens).
- Define Aspirin overdose (Salicylate toxicity).
- Define Ethanol/Methanol intoxication.
- Name other common intoxications/drug overdoses.
- Describe indications for gastric lavage and activated charcoal for acute ingestions.
- Name useful antidotes.
- Identify acute poisoning and offer general measures.
- Refer appropriately for drug overdose (Red flags).
- Identify drug overdose cases and initiate treatment for common causes (Paracetamol/Aspirin overdose, Ethanol/Methanol intoxication).
- Initiate appropriate antidote therapy in a timely manner when indicated.
- Use appropriately gastric lavage and/or activated charcoal for acute ingestions when indicated.

Acute Coronary Syndromes (STEMI, non STEMI, unstable angina)

- Define STEMI, non STEMI, unstable angina.
- Describe symptoms reported by patients with ACS (STEMI, non STEMI, unstable angina).
- List physical examination findings.
- Describe ECG interpretation (ST elevation/depression, dynamic T wave changes, new onset RBBB/LBBB) and laboratory findings (Troponin, CK/CK-MB).
- Describe the diagnostic approach.
- Identify possible complications (pulmonary edema, ventricular wall rupture, cardiogenic shock).
- Identify arrhythmias that may arise in patients with myocardial ischaemia (polymorphic ventricular tachycardia (VT), ventricular fibrillation (VF)).
- List treatment options (pharmacologic/non pharmacologic-referral implications) and first responder actions.
- Triage promptly and effectively patients with chest pain.
- Evaluate ECG's in the context of myocardial ischemia.
- Generate a differential diagnosis for chest pain based on the corresponding clinical and laboratory data.
- Apply referral options depending on eligibility for PCI/Thrombolysis.
- Act as a first responder in the context of an ACS.

Respiratory Emergencies (Asthma/COPD exacerbation, acute respiratory failure)

- Describe the symptoms of asthma/COPD exacerbations.
- Explain FEV₁, peak expiratory flow (PEF), Pao₂, Paco₂, and arterial oxygen saturation (Sao₂) interpretation in the acute setting.
- List the criteria for life-threatening exacerbations.
- Describe the GOLD criteria (COPD exacerbation).
- Describe prehospital Management (short-acting β ₂-agonists, ipratropium bromide, systemic corticosteroids, other treatments).

- Name the red flags for impending Respiratory Failure.
- List the types of acute respiratory failure (type I/II) and classify them according to presentation/workup/treatment.
- Apply ABC approach in respiratory failure.
- Explain the difference between mild/moderate/life threatening asthma/COPD exacerbations and institute initial appropriate therapy.
- Explain ABG results in the context of respiratory failure.
- Recognize impending respiratory failure (red flags).
- Apply O₂ administration strategies.
- Apply indications for hospitalization/urgent referral when evaluating patient in GP setting.

Types of shock / Hemodynamic Instability

- Describe the algorithmic approach to Shock based on clinical signs (Cardiogenic shock, Hypovolemic shock, Anaphylactic shock, Septic shock, Neurogenic shock).
- Name the red flags for severe anaphylactic reactions.
- Describe the initial management in cases of anaphylactic shock in the GP setting.
- Identify the principles of IV fluid resuscitation in the prehospital setting.
- Promptly recognize clinical signs of shock and hypo perfusion (red flags).
- Recognize type of shock and when to administer immediate lifesaving treatment (e.g adrenaline in anaphylactic shock).
- Apply the basic principles of fluid resuscitation in patients with hemodynamic instability until hospital transfer.
- Initiate appropriate treatment in a patient with hemodynamic instability until hospital transfer.

Endocrine emergencies (DM-hyperglycemia, hypoglycemia, thyrotoxicosis)

- Define Diabetic ketoacidosis/ Hyperosmolar hyperglycemic state (HHS).
- Describe appropriate fluid management and insulin administration in DKA/HHS.
- List hypoglycemia symptoms (Whipple's triad) and apply appropriate management (po/IV glucose, glucagone IM).
- List the differential diagnosis of Thyrotoxicosis (Hyperthyroidism, Thyroid Storm, and Graves' disease) and principles of initial management.
- List the possible causes of thyroid storm and initiate appropriate medical care.
- Describe the algorithmic approach to endocrine emergencies.
- Promptly identify hyper/hypoglycaemia emergencies based on corresponding red flags.
- Administer appropriately fluids/insulin and maintain electrolyte equilibrium in DKA/ Hyperosmolar hyperglycaemic state.
- Evaluate hypoglycaemia episodes and adjust patient's chronic therapy in order to avoid future incidents.
- Recognize the progression of thyrotoxicosis to thyroid storm and initiate acute management.
- Analyze and apply referral indications.



Food poisoning

- Define severe dehydration due to food poisoning and initiate oral rehydration solutions and/or IV resuscitation fluids.
- List the commonest pathogens/toxins in food poisoning.
- List the differences between gastroenteritis from noninflammatory and inflammatory diarrhea.
- Describe electrolyte equilibrium.
- Name rehydration strategies.
- Identify the most probable pathogen, order appropriate laboratory tests and initiate treatment based on current guidelines in the context of food poisoning.
- Choose the appropriate rehydration technique (oral rehydration solutions/IV resuscitation fluids) in patients with vomiting/diarrheas.
- Differentiate gastroenteritis from noninflammatory and inflammatory diarrhea and initiate appropriate investigations and therapy.
- Apply referral indications for hospitalization in severe dehydration due to diarrhea.

Various life threatening emergencies (Meningitis, DVT, Pulmonary embolism)

- Describe the symptoms of meningitis.
- List the components of a focused clinical examination in the context of meningitis and CNS infection.
- Describe the empiric therapy for Bacterial Meningitis.
- List the clinical /ECG/Radiological findings of pulmonary embolism and DVT.
- Describe Wells' Criteria.
- Promptly identify patients with meningitis based on corresponding red flags.
- Initiate empirical antibiotic therapy in a patient with meningitis based on the relevant guidelines.
- Recognize patients with meningitis that present without all the components of the diagnostic triad (only 44%-66% of patients present with all three findings).
- Recognize the clinical findings associated with pulmonary embolism.
- Apply clinical judgement and the Wells' criteria to quantify the possibility of DVT/pulmonary embolism and refer/treat accordingly.
- Evaluate the possibility of DVT/pulmonary embolism and refer/treat accordingly.

Abdominal pain (acute abdomen)

- List the commonest aetiologies for acute abdomen /describe the epidemiology.
- Describe the classification according to site.
- Identify the relevant presenting symptoms and clinical signs depending on aetiologies.
- Identify the diagnosis and evaluate the differential diagnoses.
- Identify the patient with acute abdominal symptoms and perform a rapid

	<p>assessment to establish severity of the situation.</p> <ul style="list-style-type: none"> • Demonstrate Prehospital (emergency) care of suspected acute abdomen (General measures). • Evaluate the criteria for transfer (red flags) plus diagnostic algorithms per location. • Evaluate special situations (ectopic pregnancy etc). <p><i>Gastrointestinal emergencies. (Acute bleeding from upper and lower gastrointestinal tract)</i></p> <ul style="list-style-type: none"> • Define upper and lower gastrointestinal tract bleeding. • Describe clinical presentation of acute bleeding. • Identify diagnosis and evaluate differential diagnoses. • Define criteria for referral to higher levels of care (Red flags). • Apply rapid assessment of upper and lower gastrointestinal tract bleeding and evaluate severity. • Perform ABC based emergency resuscitation in G.I. tract bleeding. • Initiate appropriate fluid resuscitation and medical treatment, monitor therapeutic results. • Evaluate and refer according to the severity of the condition (Red flags).
Learning Outcomes	<p>After completion of the module students are expected to be able to:</p> <ul style="list-style-type: none"> • Demonstrate deep understanding of the conditions of hyperthermia. • Outline and examine hyperthermia symptoms and provide relevant treatment. • Define the main acute neurological conditions: Stroke, Tia, Status Epilepticus and Syncope. • Outline and examine acute neurological symptoms and apply basic provide pharmacological interventions. • Name and define the common drug overdoses and provide the appropriate antidote therapy. • Demonstrate deep understanding of the Acute Coronary Syndromes, identify possible complications and able to provide treatment options. • Demonstrate deep understanding of the Respiratory emergencies, describe relevant treatments and be able to list the types of acute respiratory failure. • Outline the various types of shock and able to initiate appropriate treatment. • Demonstrate deep understanding of the Endocrine emergencies. • Outline how Endocrine emergencies can be managed. • Demonstrate deep understanding of the condition of food poisoning and be able to choose the appropriate therapy. • Understand and describe the symptoms of meningitis and identify the appropriate treatment. • Describe the acute abdominal symptoms and perform assessment to establish severity of the situation. • Demonstrate deep understanding of the gastrointestinal emergencies. • Apply assessment of upper and lower gastrointestinal tract bleeding and evaluate severity. • Be able to initiate medical treatment and monitor therapeutic results.

Prerequisites	None	Required	None																														
Module Content	<ul style="list-style-type: none"> • Introduction to Hyperthermia and its main complications, common Acute Neurological conditions and Drug Overdose • An Overview of the Acute chest pain conditions, Respiratory emergencies, Types of shock, Hyper-hypoglycemia emergencies and Acute thyroid problems. • An Overview of Food Poisoning & Gastroenteritis, Special Cases, Acute abdomen and Upper & Lower Gastro Intestinal Tract Bleeding 																																
Teaching Methodology	This programme is delivered via distance learning (online) and includes recorded lectures, interactive online tutorials (Webinars) and discussion forums, as well as online exercises and other activities.																																
Bibliography	Required Textbooks / Reading: <table border="1" data-bbox="469 716 1451 1877"> <thead> <tr> <th>Title</th> <th>Author(s)</th> <th>Publisher</th> <th>Year</th> <th>ISBN</th> </tr> </thead> <tbody> <tr> <td>Heat Stroke</td> <td>Robert S Helman</td> <td>-</td> <td>2018</td> <td>https://emedicine.medscape.com/article/166320</td> </tr> <tr> <td>Heat exhaustion and heatstroke</td> <td>NHS</td> <td>-</td> <td>-</td> <td>https://www.nhs.uk/conditions/heat-exhaustion-heatstroke/</td> </tr> <tr> <td>Malignant Hyperthermia</td> <td>Colin Tidy</td> <td>-</td> <td>2014</td> <td>https://patient.info/doctor/malignant-hyperthermia</td> </tr> <tr> <td>Heat-Related Illness</td> <td>Jonathan A. Becker, Lynsey K. Steward</td> <td>American Family Physician</td> <td>2011</td> <td>https://www.aafp.org/afp/2011/0601/p1325.html</td> </tr> <tr> <td>Rhabdomyolysis Treatment & Management</td> <td>Marietta Morales De Guzman</td> <td>Mdscape</td> <td>2018</td> <td>https://emedicine.medscape.com/article/1007814-treatment</td> </tr> </tbody> </table>			Title	Author(s)	Publisher	Year	ISBN	Heat Stroke	Robert S Helman	-	2018	https://emedicine.medscape.com/article/166320	Heat exhaustion and heatstroke	NHS	-	-	https://www.nhs.uk/conditions/heat-exhaustion-heatstroke/	Malignant Hyperthermia	Colin Tidy	-	2014	https://patient.info/doctor/malignant-hyperthermia	Heat-Related Illness	Jonathan A. Becker, Lynsey K. Steward	American Family Physician	2011	https://www.aafp.org/afp/2011/0601/p1325.html	Rhabdomyolysis Treatment & Management	Marietta Morales De Guzman	Mdscape	2018	https://emedicine.medscape.com/article/1007814-treatment
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Rhabdomyolysis Treatment & Management	Marietta Morales De Guzman	Mdscape	2018	https://emedicine.medscape.com/article/1007814-treatment																													

	Stroke and transient ischaemic attack in over 16s: diagnosis and initial management	NICE	-	2008	https://www.nice.org.uk/guidance/cg68
	Transient loss of consciousness ('blackouts') in over 16s	NICE	-	2010	https://www.nice.org.uk/guidance/cg109
	Epilepsies: diagnosis and management	NICE	-	2012	https://www.nice.org.uk/guidance/cg137/chapter/appendix-f-protocols-for-treating-convulsive-status-epilepticus-in-adults-and-children-adults-published-in-2004-and-children-published-in-2011#non-convulsive-status-epilepticus-in-adults-and-children-2004-guideline
	Acute Poisoning - General Measures	Laurence Knott	-	-	https://patient.info/doctor/acute-poisoning-general-measures

	Atrial Fibrillation: Management	NICE	-	2014	https://www.nice.org.uk/guidance/cg180/chapter/key-priorities-for-implementation
	Recognition and Management of Acute Medication Poisoning	Ivar I. Frithsen, William M. Simpson	American Family Physician	2010	https://www.aafp.org/afp/2010/0201/p316.html
	Self-harm in over 8s: short-term management and prevention of recurrence	NICE	-	2004	https://www.nice.org.uk/guidance/cg16/chapter/Key-priorities-for-implementation
	Overdose and Poisoning	NICE	-	-	https://www.evidence.nhs.uk/search?q=Overdose+and+poisoning
	Myocardial infarction with ST-segment elevation: acute management	NICE	-	2013	https://www.nice.org.uk/guidance/cg167/chapter/1-Recommendations
	Chest pain overview	NICE	-	-	https://pathways.nice.org.uk/pathways/chest-pain
	Myocardial Infarction	A Maziar Zafari	-	2018	https://emedicine.medscape.com

					com/article/155919-overview
	Asthma: diagnosis, monitoring and chronic asthma management	NICE	-	2017	https://www.nice.org.uk/guidance/ng80
	Management of COPD Exacerbations	Ann E. Evensen	American family physician	2010	https://www.aafp.org/afp/2010/0301/p607.html
	Exacerbations of COPD	Christian Viniol, Claus F. Vogelmeier	European Respiratory Review	2018	http://err.ersjournals.com/content/27/147/170103
	Respiratory Failure Treatment & Management	Ata Murat Kaynar	-	2018	https://emedicine.medscape.com/article/167981-treatment
	Sepsis Management National Clinical Guideline No. 6	National Clinical Effectiveness Committee (NCEC)	-	2014	https://health.gov.ie/wp-content/uploads/2015/01/National-Clinical-Guideline-No.-6-Sepsis-Management-Nov2014.pdf
	Resuscitation in Hypovolaemic Shock	Gurvinder Rull	-	2017	https://patient.info/doctor/resuscitation-in-hypovolaemic-shock
	Emergency	-	Resuscitatio	2008	https://www.re

	treatment of anaphylactic reactions		n Council (UK)		sus.org.uk/ana-phylaxis/emergency-treatment-of-anaphylactic-reactions/
	Cardiogenic Shock	Colin Tidy	-	-	https://patient.info/doctor/cardiogenic-shock
	Diabetic Ketoacidosis: Evaluation and Treatment	Dyanne p. Westerberg	American family physician	2013	https://www.aafp.org/afp/2013/0301/p337.html
	Diagnosis and management of thyrotoxicosis	Bijay Vaidya, Simon H S Pearce	BMJ	2014	https://www.bmj.com/content/349/bmj.g5128
	Emergency Management of Hypoglycaemia	Gurvinder Rull	-	-	https://patient.info/doctor/emergency-management-of-hypoglycaemia
	The Hospital Management of Hypoglycaemia in Adults with Diabetes Mellitus	Debbie Stanisstreet , Esther Walden, Christine Jones, Alex Graveling	NHS	2010	http://www.diabetologists-abcd.org.uk/JBDS/JBDS_IP_Hypo_Adults.pdf

	Hyperosmolar Hyperglycemic State	Dipa Avichal, Nissa C Blocher	-	2018	https://emedicine.medscape.com/article/1914705-overview
	Gastroenteritis in Adults and Older Children	Laurence Knott	-	2014	https://patient.info/doctor/gastroenteritis-in-adults-and-older-children
	Acute Diarrhea in Adults	Wendy Barr, Andrew Smith	American Family Physician	2014	https://www.aafp.org/afp/2014/0201/p180.html
	ESCMID guideline: diagnosis and treatment of acute bacterial meningitis	Van de Beek, D., Cabellos, C., Dzupova, O., Esposito, S., Klein, M., Kloek, A.T., Leib, S.L., Mourvillier, B., Ostergaard, C., Pagliano, P. and Pfister, H.W	-	2016	https://www.clinicalmicrobiologyandinfection.com/article/S1198-743X(16)00020-3/pdf
	Diagnosis, Initial Management, and Prevention of Meningitis	David M. Bamberger	American Family Physicians	2010	https://www.aafp.org/afp/2010/1215/p1491.pdf
	Meningitis	Rodrigo	-	2017	https://emedicine

	Treatment & Management	Hasbun			ne.medscape.com/article/232915-treatment
	Venous thromboembolic diseases: diagnosis, management and thrombophilia testing	NICE	-	2012	https://www.nice.org.uk/guidance/cg144/chapter/recommendations
	NICE guideline: management of venous thromboembolic diseases and role of thrombophilia testing	Luke S Howard, Rodney J Hughes	BMJ Journals	2013	https://thorax.bmj.com/content/68/4/391
	Deep Venous Thrombosis and Pulmonary Embolism: Current Therapy	Jason Wilbur, Brian Shian	American Family Physician	2017	https://www.aafp.org/afp/2017/0301/p295.html
	Gastrointestinal conditions overview	NICE	-	-	https://pathways.nice.org.uk/pathways/gastrointestinal-conditions
	Abdominal Pain, Acute	-	American Family Physician	-	http://www.aafp.org/afp/topicModules/viewTopicModule.htm?topicModuleId=73
	Ectopic pregnancy and	NICE	-	-	https://pathways.nice.org.uk/p

	miscarriage overview				athways/ectopic-pregnancy-and-miscarriage										
	Acute upper gastrointestinal bleeding overview	NICE	-	-	https://pathways.nice.org.uk/pathways/acute-upper-gastrointestinal-bleeding										
	Acute upper gastrointestinal bleeding in over 16s: management	NICE	-	2012	https://www.nice.org.uk/guidance/CG141/chapter/1-Guidance#resuscitation-and-initial-management										
Recommended Textbooks / Reading:															
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Assessment	<ul style="list-style-type: none"> • WPBA Components <ul style="list-style-type: none"> - Summative CBD (CBD 7) - Summative CEPS (CEPS 6) • Exams <ul style="list-style-type: none"> - Summative AKT Exam 														
Language	English														