



Anhang 1

Swiss Clinical Emergency Medicine Specific Learning Objectives

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Contents

Introduction to Swiss Clinical Emergency Medicine Specific Learning Objectives

The following pages describe the knowledge and skills required of a Clinical Emergency Physician in Switzerland.

This Swiss Clinical Emergency Medicine specific learning objectives are an adaptation of the English Emergency Medicine specific learning objectives. The authors of this catalogue intended to be concise and to avoid duplications. Therefore, they avoided detailed descriptions of all potential diagnoses. Furthermore, the knowledge and skills should be put into the context of the curriculum described in the previous section.

The authors of this catalogue did not describe the assessment methods after each problem. In absence of a final exam and in absence of standardised quality assessment instruments in Swiss emergency medicine education the assessment is in most units observed care and case based discussion.

It is expected that the trainee will manage increasingly complex cases independently as he or she progresses through training.

With regard to Paediatrics much of the curriculum is directly applicable to children and should be assumed. Those requiring details on sub-specialisation in paediatrics should contact heads of paediatric emergency medicine units in Switzerland. Furthermore, this catalogue does not include emergency circumstances in neonatology.

Specific learning objectives for major incident management in Switzerland were described elsewhere.

Clinical research in emergency medicine is urgently needed in Switzerland, however, will not be described in this catalogue. Specific learning objectives for clinical research in Switzerland are described in masters for clinical research of different Swiss Universities.

Management of an emergency unit in Switzerland is actually heterogeneous. Therefore, the authors abstained from descriptions of specific learning objectives.

Abbreviations used in Swiss Clinical Emergency Medicine Specific Learning Objectives

Learning Experiences

Learning from practice	LP
Learning from Trainers	LT
Personal Study	PS
Life Support Courses	LS
Skills Laboratory (working in progress)	SL
Work shop (working in progress)	WS

1: Generic objectives for Resuscitation

Objectives:

- To be able to use a structured prioritised approach to life threatening situations
- To be able to undertake resuscitation procedures in a timely and effective manner
- Understand the indications, pharmacology, contra indications of resuscitation drugs
- Lead and supervise the resuscitation team
- Effectively interact with other specialties to ensure optimal care
- To be supportive of relatives and friends of the patient whilst giving clear information
- Exercise good judgement as to when resuscitation is futile or inappropriate

1.1: Resuscitation – Cardiac Arrest / Peri-arrest

Objectives: To be able to assess and initiate management of patients presenting with life threatening cardiac diseases using both Basic Life Support and Advanced Life Support techniques.

Problem	Knowledge	Skills / Attitudes	Learning
Cardiac arrest Peri arrest arrhythmias	Familiarity with the ALS algorithms and pharmacology Cardiac arrests in special situations, e.g. hypothermia, trauma, overdose Post arrest management Peri-arrest arrhythmias and pharmacology of drugs used	Skills Perform effective B.L.S. and A.L.S. Rhythm recognition and treatment Safe defibrillation To know when to discontinue resuscitation External pacing Ensure close liaison with in-patient teams and radiology	LP LT PS LS SL

Cardiac Arrest and peri-arrest

1.2: Resuscitation – Shock

Objectives: To be able to assess and initiate management of patients presenting with shock using both Basic Life Support and Advanced Life Support techniques.

Problem	Knowledge	Skills / Attitudes	Learning
Shocked patient	Identification of the shocked patient and its causes Role and types of monitoring including CVP, SvO ₂ , urine output Inotropes and vasopressors Identification of patients for urgent surgical intervention	Skills To be able to gain peripheral Intra-osseous techniques Management of fluid balances and vasoactive drugs Ensure close liaison with in-patient teams and radiology	LP LT PS LS SL

Shock

1.3: Resuscitation – Coma

Objectives: To be able to assess and initiate management of patients presenting with coma using both Basic Life Support and Advanced Life Support techniques.

Problem	Knowledge	Skills / Attitudes	Learning
Comatose patient	<p>Differential diagnosis of the comatose patient.</p> <p>Investigation of the comatose patient (routine blood tests/arterial blood gas/radiology) and initial treatment</p>	<p>Skills</p> <p>Protection of the comatose patient including spine investigation and immobilisation</p> <p>Systematic history and examination and appropriate diagnostic testing</p> <p>Management of fluid balances and vasoactive drugs</p> <p>Ensure close liaison with in-patient teams and radiology</p>	<p>LP</p> <p>LT</p> <p>PS</p> <p>LS</p> <p>SL</p>

Coma

2: Pain Relief and Conscious Sedation

Objectives: To safely and effectively relieve pain, the commonest presenting complaint in the Emergency Department, in a timely way. To be able to perform safe conscious sedation.

Problem	Knowledge	Skills / Attitudes	Learning
Pain assessment	Pain scoring	Skills Pain assessment with pain scoring and pain description	LP
	Cause of pain		LT
Pain treatment	Use of analgesics and be aware of their complications and side effects	Selection and safe prescribing of appropriate analgesic, dosage and route of administration	PS
	Controlled drug policy	Work with anaesthesiologists in case of resistant pain	LS
	Use of local anaesthesia and physical measures		SL

Pain management

Problem	Knowledge	Skills / Attitudes	Learning
Conscious sedation in selected patients	<p>Local sedation practice and guidelines</p> <p>Recognition of risk factors for complications (airway, co- morbidity, and drugs/alcohol), monitoring, O₂ therapy, resuscitation equipment</p>	<p>Skills</p> <p>Airway assessment in order to deal with complications</p> <p>Safe titration of drugs in a monitored environment</p> <p>Prompt recognition of over sedation</p> <p>Work with anaesthesiologist or intensive care physician in case of difficulty</p>	<p>LP</p> <p>LT</p> <p>PS</p> <p>LS</p> <p>SL</p>

Conscious sedation

3.1: Major Trauma

Objectives: To be able to assess and initiate management of patients presenting with major trauma.

Problem	Knowledge	Skills / Attitudes	Learning
Major trauma	To understand the epidemiology of trauma	Take an ambulance service hand over	LP
Trauma needing life threatening surgery	Understand the importance of mechanisms of injury, trauma scoring and how trauma teams work	Recognise need for, and carry out, life saving procedures using the A, B, C, D, E approach (ATLS principles)	LT
Diagnostic testing in major trauma		To provide adequate pain relief	PS
		To be skilled in x-ray interpretation and the use of FAST	LS
		Ensure a team-based approach with other specialists	

Major trauma

3.2: Head Injury

Objectives: To be able to assess and initiate management of patients presenting with head trauma.

Problem	Knowledge	Skills / Attitudes	Learning
Head injured patient	Stratification of head injured patients	Recognise the major head injury and institute an A, B, C, D, E approach, optimise therapy to avoid secondary brain injury. Identify those patients who will need intubation and ventilation	LP
Head injury needing Neurosurgical referral	Indications for CT/plain radiology		LT
Diagnostic procedures	Identification of patients needing neurosurgical referral	Use history and examination and appropriate investigation	PS
In head injured patients	Intracranial consequences of a head injury	Appropriate and timely involvement of neurosurgery	LS
	Interpretation of Plain radiology/CT	Recognise and treat for minor head injury. Ensure the safe discharge of patients with minor head injury	SL
	Specific guidelines	Perform appropriate management of large scalp laceration	

Head injury

3.3: Chest Trauma

Objectives: To be able to recognise and treat those patients who have life-threatening or potentially life-threatening chest injuries.

Problem	Knowledge	Skills / Attitudes	Learning
Life-threatening or potentially life-threatening chest injuries.	Causes of life threatening chest trauma	Apply A, B, C, D, E approach (ATLS)	LP
	Indications for CT / early surgical involvement	Needle thoracocentesis	LT
	Appreciate the plain radiology and CT findings of chest injuries	Call appropriately cardiothoracic surgery	PS
		To provide advice and care for those patients with isolated chest wall injuries who are to be discharged	LS SL

Chest trauma

3.4: Abdominal and Pelvic Trauma

Objectives: To be able to recognise and treat those patients who sustained significant abdominal or pelvic trauma.

Problem	Knowledge	Skills / Attitudes	Learning
Abdominal trauma	Causes of abdominal trauma	Skills	LP
	Role of imaging, e.g. FAST scanning	Assess and reassess the traumatic abdomen, initiate treatment and investigation and involve appropriate specialists	LT
	Indications for CT / early surgical involvement	Use history	PS
		Recognise the influence of injuries elsewhere on abdominal assessment	LS
		Be able to undertake a FAST scan	
		NGT placement	SL

Problem	Knowledge	Skills / Attitudes	Learning
Pelvis trauma	<p>Management of the exsanguinating pelvic fracture including the role of external fixation and arteriography</p> <p>Indications for early interventional radiology</p>	Recognise those patients who need urgent specialist care	<p>LP</p> <p>LT</p> <p>PS</p> <p>LS</p> <p>SL</p>

Abdominal and pelvic trauma

4: Minor Trauma and Wound Management

Objectives: To be able to assess a wound, provide analgesia to ensure adequate exploration, cleansing and debridement. Decide if wound should be closed or not and select appropriate technique. Recognise those wounds that require specialist referral.

Problem	Knowledge	Skills / Attitudes	Learning
Assessment of minor trauma	Classification and description of wounds	Local anaesthetic techniques	LP
Wound management	Closure techniques: sutures, staples, glue, adhesive strips, delayed primary closure	Recognition of underlying structures	LT
Specialist referral	Wound dressings/splintage	Ensure thorough mechanical wound cleansing and removal of foreign bodies	PS
	Special wounds: puncture, bites, wound infections, degloving, foreign bodies	Ensure the best conditions for wound management i.e. appropriate lighting, analgesia, and equipment	SL
	Tetanus immunisation schedules	Correct closure technique	
		Ensure close liaison with in-patient teams and radiology in case of damage of underlying structures and those patients at risk of wound infection / delayed healing. This approach allows appropriate follow up	

5: Generic objectives for musculoskeletal conditions

Objectives:

- To be able to take an appropriate history, examination, investigation and initiate treatment of patients presenting with musculoskeletal pathology. Emergency Physicians should be aware of the predicted clinical course and specific complications for these conditions
- Recognise those that need further in- patient/outpatient care, the role of physiotherapy and those who can be discharged directly from the Emergency Department

6: Rheumatology

Objectives: To be able to assess and initiate management of patients presenting with rheumatological problems, e.g. exacerbations of neck pain, shoulder pain, back pain. Specifically to be able to examine all joints, and interpret signs of rheumatological disease. See below for specific problems.

Problem	Knowledge	Skills / Attitudes	Learning
Acute monoarthritis	Causes and diseases	Initiate investigations To explore the differential diagnosis and specifically to identify those patients who may have septic arthritis Identify those patients who require admission	LP LT PS
Acute low back pain	See Spinal Injury above Guidelines for the treatment and investigation of acute low back pain	Initiate investigations to explore diagnoses Identify when to consult with other specialties e.g. orthopaedics /neurosurgery/rheumatology Understand when and which radiology is required.	LP LT PS

Problem	Knowledge	Skills / Attitudes	Learning
Other topics	Acute polyarthritis and crystal arthropathies Osteoarthritis Rheumatoid arthritis Tendonitis / Tenosynovitis Bursitis Reflex sympathetic dystrophy	Identify when to consult with other specialties	LP LT

Rheumatology

7: Vascular Emergencies

Objectives: To be able to under-take a history and examination focussed on the vascular system and identify those conditions that compromise organ or extremities.

Problem	Knowledge	Skills / Attitudes	Learning
Arterial disease	The symptoms, signs, presentation and causes of peripheral and mesenteric ischaemia, abdominal and thoracic aortic aneurysms and aortic dissection	Resuscitate, perform appropriate investigations Initiate timely appropriate imaging and referral to appropriate specialist	LP LT PS
	Traumatic vascular injury		

Arterial emergencies

Problem	Knowledge	Skills / Attitudes	Learning
Venous disease	Investigation and management of DVT including role of risk stratification, d-dimers and ultrasound	Focused clinical examination to establish most likely diagnosis of painful / swollen calf	LP LT PS
	Proximal vein thrombosis		

Venous emergencies

8. Abdominal pain and intestinal bleeding

Objectives: To be able to take a full history and examination, elicit relevant physical signs, commence resuscitation and investigation. To be able to undertake appropriate history and examination and initiate appropriate treatment for patients presenting haematemesis. To be able to undertake appropriate history and examination to establish diagnosis and initiate appropriate treatment with patients presenting anal or rectal bleeding.

Problem	Knowledge	Skills / Attitudes	Learning
Abdominal pain	Causes of acute abdominal pain	<p>To have an A, B, C, D, E approach ensuring effective fluid resuscitation, pain relief and appropriate use of a nasogastric tube and antibiotics</p> <p>Identify those who need resuscitation and urgent surgery</p> <p>Those that require admission and those who may be safely discharged</p> <p>Investigation using plain radiology, CT, ultrasound and blood tests</p>	<p>LP</p> <p>LT</p> <p>PS</p>

Abdominal pain

Problem	Knowledge	Skills / Attitudes	Learning
Intestinal bleeding	<p>Causes</p> <p>Indications for blood administration, monitoring of vascular filling, urgent endoscopy and surgical involvement</p> <p>Specific knowledge of the management of bleeding oesophageal varices</p>	<p>Recognition of shock</p> <p>IV access in the shocked patient</p> <p>Coordination of teams</p>	<p>LP</p> <p>LT</p> <p>PS</p>

Haematemesis

Problem	Knowledge	Skills / Attitudes	Learning
Anal and rectal diseases	<p>Causes of anal pain and rectal bleeding</p> <p>Options for appropriate and adequate analgesia</p>	<p>Identify those patients who need admission and those who can be appropriately managed as an outpatient</p> <p>Recognition and treatment of shock</p>	<p>LP</p> <p>LT</p> <p>PS</p>

Anal pain and rectal bleeding

9: Urology

Objectives: To be able to assess and to initiate management of patients presenting urological problems. To be able to recognise emergent situations.

Problem	Knowledge	Skills / Attitudes	Learning
Acute urinary retention	Recognise patients with acute urinary retention, relieve symptoms and establish diagnosis	Urinary catheterisation	LP LT PS
Acute scrotal pain	Common cause of scrotal pain	Recognition that testicular torsion is an emergency and ensuring timely referral	LP LT PS

Urology

10: Eye problems

Objectives: To be able to evaluate those patients presenting with red or painful eyes and those suffering sudden visual loss. To be able to assess visual acuity and undertake ophthalmoscopy and slit lamp examination. To understand the pharmacology of ocular drugs.

Problem	Knowledge	Skills / Attitudes	Learning
Red eye	Causes of red eyes	<p>To be able to diagnose, recognise associations</p> <p>To provide immediate flushing for those patients who have suffered ocular chemical burns</p>	<p>LP</p> <p>LT</p> <p>PS</p>

Eye conditions

11: ENT and Dental Emergencies

Objectives: To be able to undertake appropriate history, examination and investigation of patients presenting with ENT or dental problems, ensuring appropriate treatment and referral.

Problem	Knowledge	Skills / Attitudes	Learning
Painful ear	Causes	Prescribe appropriately Identify those who need ENT referral Removal of foreign bodies Aural toilet	LP LT PS
Epistaxis	Common causes including trauma and medication	Undertake anterior nasal packing / use nasal tampon	LP LT PS
Sore throat	Causes	To recognise underlying pathologies and the risk to the airway and involve appropriate specialist in a timely fashion	LP LT PS Work shop

ENT conditions

Problem	Knowledge	Skills / Attitudes	Learning
Dental emergencies	Causes	<p>To provide appropriate analgesia and antibiotic therapy for patients with dental abscess</p> <p>Identify those that require immediate referral</p>	<p>LP</p> <p>LT</p> <p>PS</p>

Dental emergencies

12: Chest Pain and Cardiology

Objectives: To undertake a structured approach to the history, examination and investigation of patients presenting with symptoms that may be due to a cardiological cause. To be able to interpret the results of investigations such as ECG, chest x-ray and cardiac enzyme testing.

Problem	Knowledge	Skills / Attitudes	Learning
Chest pain	Causes	<p>A, B, C, D, E approach</p> <p>Appropriate monitoring, treatment and investigation and be familiar with local guidelines for the management of patients with chest pain of possible cardiac origin and pulmonary embolism</p> <p>To be able to risk stratify patients with chest pain and to be able to follow appropriate departmental pathways</p>	<p>LP</p> <p>LT</p> <p>PS</p> <p>LS</p> <p>SL</p>
Acute coronary syndromes	<p>Understand stable and unstable angina and myocardial infarction. (ACS)</p> <p>Recognise ECG changes related to ACS. Causes of ST elevation in the</p>	<p>Recognise the need for urgent assessment and prompt treatment with percutaneous coronary intervention when indicated</p>	<p>LP</p> <p>LT</p>

Problem	Knowledge	Skills / Attitudes	Learning
	<p>absence of myocardial infarction</p> <p>Indications for interventional cardiology. Indications, contra-indications and complications of thrombolysis</p> <p>Management of left ventricular failure in the setting of myocardial infarction</p> <p>Pharmacology of cardiac drugs</p>	<p>To identify and treat complications such as arrhythmias, pulmonary oedema and hypotension</p>	<p>PS</p> <p>LS</p>
<p>Patients presenting with syncope</p>	<p>Causes</p> <p>Risk stratification and appropriate diagnostic testing</p>	<p>To be able to identify those patients that require admission, those that need out patient follow up and those that can be safely discharged</p>	<p>LP</p> <p>LT</p> <p>PS</p>
<p>Patients presenting in heart failure</p>	<p>Causes, precipitating factors and prognosis</p> <p>Drugs to use, contraindications and side effects</p>	<p>Initiate investigations to identify the cause</p>	<p>LP</p> <p>LT</p> <p>PS</p> <p>LS</p>

Problem	Knowledge	Skills / Attitudes	Learning
Severe haemodynamic compromise	<p>Cardiogenic shock, secondary to myocardial infarction, massive PE, aortic dissection, valve rupture e</p> <p>Emergency imaging including echocardiogram and CT</p> <p>Role of angioplasty / surgery / thrombolysis</p> <p>Use of inotropes</p>	<p>Recognise the need for rapid assessment</p> <p>Initiate investigation and treatment</p> <p>Liaise with appropriate specialists and co-ordinate investigation</p>	<p>LP</p> <p>LT</p> <p>PS</p> <p>LS</p>
Arrhythmias	<p>ECG recognition of narrow and broad complex tachycardias and bradycardias. Indications for pacing</p> <p>Indications, contraindication and side effects of anti-arrhythmic drugs</p> <p>ALS guidelines</p>	<p>To recognise and correctly identify arrhythmias</p> <p>Ability to perform carotid sinus massage</p> <p>Perform DC cardioversion</p> <p>Manage arrhythmias according to specific guidelines</p> <p>Use of external pacing equipment</p>	<p>LP</p> <p>LT</p> <p>PS</p> <p>LS</p>

13: Respiratory Medicine

Objectives: To be able to undertake a history and clinical examination of the respiratory system and interpret the clinical signs.

Application of the A,B, C, D, E approach. Detailed knowledge of investigations of the respiratory system including interpretation of blood gases and chest x-ray. Principles of invasive and non-invasive ventilation. Principles of oxygen therapy.

Problem	Knowledge	Skills / Attitudes	Learning
Asthma	Causes	To be able to recognise acute severe asthma and institute emergency treatment	LP
	Guidelines		LT
	Detailed knowledge of drug therapy	To be able to recognise early those patients with life threatening asthma who may require ventilation	PS
		To be able to organise safe discharge of patients suffering from an acute asthma exacerbation	LS
Spontaneous pneumothorax	Causes	To be able to aspirate a pneumothorax and insert a intercostal drain	LP
	Specific Guidelines		LT PS SL
Pulmonary embolism	Causes, differential diagnosis and risk factors.	Recognise the need for urgent investigation (ECG, blood gas, blood analysis including d-dimere, echocardiography, CTPA) and treatment	LS
	Specific guidelines		LT

Problem	Knowledge	Skills / Attitudes	Learning
	Severity stratification, investigation and initial treatment including anticoagulation, thrombolysis* and thromboembolectomy*		PS LS
COPD	Guidelines for the management of acute exacerbations of COPD Oxygen therapy, drug therapy	To be able to initiate appropriate therapy Recognise and treat precipitating factors Identify those who can be safely discharged Assessment and timely initiation of non invasive ventilation in appropriate patients. Recognition of those patients who need intubation and ventilation	LP LT PS SL
Pneumonia	Assessment and management of community acquired and nosocomial pneumonia according to guidelines Recognition of the severity of pneumonia	To be able to undertake appropriate investigation To be able to record the markers of severity of pneumonia. Identify co-morbidity and associated septicaemia	LP LT PS

Problem	Knowledge	Skills / Attitudes	Learning
	Causes of pneumonia and appropriate antibiotic therapy	Identify those patients needing ventilation and intensive care To identify those patients suitable for community care	
Respiratory failure	Causes and appropriate investigations Indications for ventilation	Recognition of those patients in respiratory failure Initiate therapy, including oxygen and bag valve mask ventilation if needed. Identify those that need non-invasive ventilation/invasive ventilation	LP LT PS LS
Other topics	Acute lung injury Pleural effusion Foreign body inhalation Haemoptysis Presentation of TB, neoplasia and lung abscess Physical and chemical irritants Non cardiogenic pulmonary oedema Pneumomediastinum Adult cystic fibrosis		LP LT PS

14: Neurological Emergencies and Headache

Objectives: To be able to undertake a full neurological history and examination and interpret the clinical findings in the Emergency Department setting. To be able to undertake appropriate investigation, and manage those with life-threatening neurological emergencies. See below for specific conditions.

Problem	Knowledge	Skills / Attitudes	Learning
Headache	Causes	Apply A, B, C, D, E approach. Initiate investigations to explore diagnosis. Appropriate use of CT, LP To be able to identify unusual headaches and liaise with Radiology / Neurology / Neuro-surgery To be able to identify after appropriate investigation those who are suffering from benign headache and therefore suitable to be discharged	LP LT PS
Status epilepticus	Causes and complications Follow algorithm in status epilepticus and be aware of complications Diagnosis of pseudo-seizures	A, B, C, D, E approach Initial focus on the remediable causes, but ability to retain a broader and appropriate investigation Knowledge and appropriate use of pharmacological	LP LT PS LS

Problem	Knowledge	Skills / Attitudes	Learning
Meningitis, encephalitis, brain abscess	Clinical features, differential diagnosis, antiviral and antimicrobial therapy, complications	agents Urgent antibiotic treatment Appropriate investigations: CT, LP	LP LT PS
Cerebrovascular disease	Guidelines for the Management of Stroke and TIA Causes	Recognise the value of Stroke Units Ensure timely referral for further investigation of those patients suffering a TIA	LP LT PS

Neurological Emergencies

15: Hepatic Disorders

Objectives: To be able to undertake focussed history and examination of those patients presenting with symptoms and signs related to underlying liver disease, to establish differential diagnosis and to initiate treatment.

Problem	Knowledge	Skills / Attitudes	Learning
Liver failure	Causes and precipitants Specific complications including encephalopathy, sepsis, fluid and electrolyte balance, renal impairment, hypoglycaemia, coagulopathy, bleeding and malnutrition	Initiative investigations to establish diagnosis and cause including interpretation of liver function tests Avoid precipitating/exacerbating drugs Recognise the need to discuss with specialists	LP LT PS
Others	Spontaneous bacterial peritonitis Jaundice Hepatorenal syndrome Portal hypertension	Initiate appropriate investigations and treatment Initiate appropriate specific care	LP LT PS

Hepatic disorders

16: Toxicology

Objectives: To be able to assess and initiate the management of patients presenting with toxicological problems. To be able to recognise common toxidromes, understand the role of antidotes. To be able to access poisons information and understand the legal, psychiatric and social aspects of overdose. To understand the pharmacology of common poisons.

Problem	Knowledge	Skills / Attitudes	Learning
Poisoning and drug overdose	Causes Initial management of common poisonings The role of drug testing / screening	Assess and provide emergency care Use poisons information and knows the role of charcoal and alkalisation and antidotes Identify the psychiatric aspects of overdose	LP LT PS
Illicit drugs	Psychological and physiological effects of opioids, amphetamines, ecstasy, cocaine and alcohol To understand addiction, dependence and withdrawal	Recognising illicit drug use, acquire accurate history, and be able to use poisons information services Initiate appropriate follow-up including psychiatric and rehabilitation services	LP LT PS
Others	Ingestion of mushrooms and berries		LP LT PS

17: Acid Base and Ventilatory disorders

Objectives: To be able to interpret arterial and venous blood gases and establish the diagnosis or differential diagnosis. To understand how blood gas analysis can be used to determine treatment and monitoring.

Problem	Knowledge	Skills / Attitudes	Learning
Arterial and venous blood gas analysis	Blood concentration of H ⁺ , O ₂ , CO ₂ and base excess Anion and osmolar gap Carbon monoxide poisoning Methhaemoglobinaemia	Take arterial blood gas from the radial or femoral artery safely Interpretation of arterial and venous blood gas results: metabolic (including lactic) acidosis, acute and chronic respiratory acidosis, respiratory alkalosis and metabolic alkalosis and combination of them	LP LT PS

Acid Base disorders

18: Fluid and Electrolytes

Objectives: To understand the common electrolyte and fluid compartment changes and manage them safely.

Problem	Knowledge	Skills / Attitudes	Learning
Electrolyte abnormalities	Knowledge of volume and composition of the different fluid compartments	Use of appropriate type of fluid and volume	LP
Fluid balance	Know the constituents of common crystalloid and colloid solutions Understand the common electrolyte fluid disturbances and how they are managed	To be able to treat safely the common electrolyte disturbances	LT PS LS

Electrolytes

19: Renal Disease

Objectives: To be able to undertake history and examination, establish diagnosis, differential diagnosis and initiate management of common renal emergencies.

Problem	Knowledge	Skills / Attitudes	Learning
Acute renal failure	Causes and severity	Identify pre-renal uraemia, causes of oliguria, strategies to treat reversible causes of acute renal failure	LP
		Use clinical findings and laboratory results to detect and treat pre renal uraemia	LT
		Liaise with renal and urological physicians	PS
Urinary tract infections	Causes and differences between simple and complicated urinary tract infections Appropriate antimicrobial agents	Identify those patients who require further investigation, admission, and those who require out patient follow up.	LP
		Interpret urine dipstick, microscopy and culture results.	LT
		Select appropriate antimicrobial agents	PS
Patients with renal replacement therapy	Recognise the complications of renal transplant patients and those on peritoneal and haemodialysis.	Recognition of life threatening conditions in these patients e.g. hyperkalaemia	LP
		Identify those who need emergent dialysis and liaise with renal physicians	LT PS
Others	Rhabdomyolysis, haematuria, proteinuria	Initiate appropriate specific care	LP LT, PS

20: Diabetes and Endocrinology

Objectives: To be able to assess and initiate management of patients presenting with diabetic and the other common endocrinology emergencies.

Problem	Knowledge	Skills / Attitudes	Learning
Diabetic ketoacidosis	Precipitating causes and undertake appropriate investigations Protocols for the management of diabetic ketoacidosis	Prescribe fluids, insulin and potassium appropriately Reviewing and testing these patients regularly	LP LT PS
Hyperosmolar non-ketotic coma	Precipitating causes	Prescribe fluids, insulin and potassium appropriately Reviewing and testing these patients regularly	LP LT, PS
Hypoglycaemia	Clinical features and precipitating causes	Measure blood glucose at the bedside Administer rapidly glucose	LP LT, PS
Acute adreno cortical insufficiency	Causes of insufficiency	Identify the types and causes of insufficiency and recognise an adrenal crisis Initiate appropriate investigations and treatment	LP LT PS
Others	Thyroid storm and hypothyroid crisis Phaeo-chromocytoma Pituitary failure Diabetes Insipidus		LP LT PS

21: Haematology and Oncology

Objectives: By taking appropriate history, examination and investigation identify the following common haematological and oncological emergencies.

Problem	Knowledge	Skills / Attitudes	Learning
Haemoglobinopathies	Causes, clinical features and precipitating circumstances Complications	Initiate appropriate investigations and treatments Manage fluid balance and analgesia Liaison with haematology and oncology	LP LT PS
Disseminated intravascular coagulation	Underlying causes and diagnostic criteria	Initiate emergency treatment Close liaison with haematology Initiate investigations to identify the underlying cause	LP LT PS
Coagulopathies and thrombopathies	Complications of anticoagulants I.T.P.	Initiate appropriate investigations and treatments	LP LT PS

Haematology

Problem	Knowledge	Skills / Attitudes	Learning
Complications related to local tumour progression	Upper airway obstruction Malignant pericardial effusion SVC syndrome Malignant pleural effusion. ↑ ICP Acute spinal cord compression	To be able to recognise and provide initial emergency management Involve specialists	LP LT PS
Biochemical complications of malignancy	Hypercalcaemia of malignancy Inappropriate ADH Adrenocortical insufficiency	Test for, diagnose and initiate treatment for these conditions.	LP LT PS
Complications related to myelosuppression	Risk of myelosuppression	To identify those patients at risk and to take appropriate microbiological samples Initiate appropriate antibiotics Recognise need for oncological involvement	LP LT PS
Others	Paraneoplastic syndromes Care of the terminally ill*		LP LT PS

22: Infectious Diseases, Sepsis and Sexually Transmitted Disease

Objectives: To be able to identify after complete history, examination and investigation those patients suffering from infectious diseases, sepsis and sexually transmitted disease.

Problem	Knowledge	Skills / Attitudes	Learning
Sepsis	Causes and definition of sepsis, severe sepsis, septic shock and systemic inflammatory response syndrome Complications of sepsis Typical sites of origin and microbiology	Assess severity Goal directed therapy in sick patients with presumed meningitis, toxic shock syndrome and severe sepsis / shock Appropriate use of vasopressors and fluids. Selection of the appropriate antibiotic Select appropriate investigations	LP LT PS
Immunocompromised hosts.	To be able to identify those patients who are immunocompromised and have atypical presentation of infection	High index of suspicion of infection To liaise with the appropriate specialists regarding investigation and treatment	LP LT PS
Needlestick injury and other accidental contacts with injected products	Understand the hospital policy	To identify those patients who need prophylactic treatment (HIV, hepatitis B, Tetanus) Selection of appropriate investigations and treatments in coordination with specialists	LP LT PS

Problem	Knowledge	Skills / Attitudes	Learning
Fever from abroad	Causes, especially malaria, typhoid, TB and sexually transmitted diseases	Take a travel history and check vaccination/prophylaxis especially compliance Select appropriate investigations including serial testing for malarial parasites Initiate appropriate specialised care	LP LT PS
Vaccination	Importance of vaccination state	Take a history and check vaccination Initiate appropriate vaccination	LP LT, PS
Sexually transmitted disease including HIV	Causes, presentations and complications	Appropriate investigation and referral to specialist Health care advice concealing	LP LT PS

Infectious diseases

23: Dermatology

Objectives: To be able to assess patients with life-threatening dermatological problems. To be able to describe dermatological lesions and recognise dermatological emergencies.

Problem	Knowledge	Skills / Attitudes	Learning
Allergic skin diseases	Causes and complications Guidelines for severe allergic reactions	Assess airway patency and manage upper airway obstruction and initiate rapid treatment Safely identify those who are suitable for discharge and those who need further observation Recognise the importance of a follow up (allergy clinic) and the role of the Epipen	LP LT PS LS Work shop
Infectious skin diseases	Causes and complications Appropriate antibiotics. Knowledge of associated underlying problems	Initiate appropriate antibiotic therapy To identify those who have abscess formation and organise drainage Identify those patients who require admission, those who may be managed as an outpatient	LP LT PS Work shop

Problem	Knowledge	Skills / Attitudes	Learning
Others	Viral xanthems, tick borne transmitted diseases	Initiate appropriate investigations and treatments Knowledge of the guidelides for the postexposal porphylaxis Initiate appropriate specialised care	LP LT PS Work shop

Dermatology

24: Psychiatry

Objectives: To be able to assess patients with psychiatric problems. To be able to recognise psychiatric emergencies.

Problem	Knowledge	Skills / Attitudes	Learning
Deliberate self-harm/parasuicide	Guidelines for deliberate self-harm Risk factors for suicide	Identification of co-morbid psychiatric problems Appropriate referral and discharge. Liaison with psychiatric services	LP LT PS
Acute psychosis	Causes including organic Management	Initial management including drug indications/contraindications Appropriate referral and discharge. Liaison with psychiatric services	LP LT PS
Alcohol and drug / substance related problems (intoxication, dependence)	See Toxicology section above	Identification of those who are alcohol and drug / substance dependant Identification for those patients warranting admission. Recognition of associated conditions, e.g. head injury. Involve other specialties e.g. psychiatry, social services, General Practitioner, rehabilitation services	LP LT PS
Alcohol and drug withdrawal syndrome	Identify this syndrome and specific complications including self-damage	Initiate appropriate drug treatment	LP LT PS

Problem	Knowledge	Skills / Attitudes	Learning
Other topics	Violent behaviour (domestic, sexual assault, staff safety, restraint) Dementia – assessment and causes Difficult patient (malingering, personality disorder, frequent attender)	Management including de-escalation techniques Working with other agencies	LP LT PS

Psychiatry

25: Legal Aspects of Emergency Medicine and Discharge Policy

Objectives: To be familiar and compliant with the legal aspects of Emergency Medicine.

Problem	Knowledge	Skills / Attitudes	Learning
Legal aspects of Emergency Medicine	Consent, capacity to consent, refusal Forensic documentation: drug and alcohol testing, domestic violence, sexual assault, child abuse	Work for the patient's interest as central Appropriate management including consultation of Seniors, security forces, hospital legal departments and cantonal authorities Initiate appropriate specialised support	LP LT PS

Legal aspects