HMO Lecture Series
Self-Directed Learning Package
2014

To be read in conjunction with:
HMO/intern position description
ED HMO Handbook
ED self directed workbook & education timetables
Emergency Department Education Program

The ED provides a series of tutorials on Thursday mornings for Hospital Medical Officers, with medical students occasionally attending.

Given that medical staff rotate to the ED it is impossible to coordinate a schedule of sessions that matches well with these rotations for various individuals. It is also true that during a ten week ED rotation that a session scheduled in Week 10 is of little use when you are seeing the patients in the early part of your rotation.

Therefore in 2012 we will provide the ED sessions and teaching materials in advance. There are a number of pre reading materials including journal articles and web links. Training resources, such as pre-reading materials, PowerPoint presentations and relevant articles are available on the ED Education Resources - HMOs page on the ED Intranet Site (only accessible at BHS).

In combination with the self directed workbook the aim of providing these in advance is for medical staff to assess their prior knowledge, and work at their own pace to improve their knowledge of Emergency Medicine.

Hopefully this will involve a substantial amount of case based learning, both in the education room and while working in the ED.

BHS Online Educational Resource


An online education resource has been compiled to allow doctors, nursing and clinical staff access to education programs, presentations and other relevant information when not within the BHS facility.

Under the Emergency icon, this site contains the HMO education program information including recommend pre reading, PowerPoint presentation and other learning resources.

http://educationresource.bhs.org.au/emergency
Emergency Medicine Certificate (EMC)

The EMC is a 6 month training program offered though the Australasian College for Emergency Medicine (ACEM). The course will provide participants with a broad range of knowledge and skills to meet the demands of basic emergency medicine practice. It focuses on competencies considered essential for a non-specialist doctor working in Emergency Medicine.

- EMC Information for Candidates document

The certificate is open to candidates who are PGY 2 and have completed at least 10 weeks (at 1FTE) experience in an Emergency Department.

These media releases give some background to the program:

- Media release from the Prime Minister
- Media release from ACEM

ACEM registrar training – accredited

Registrars

This workbook is to be reviewed by the ED Registrars to ensure they are aware of the training and education provided to junior medical staff who they supervise overnight.
1. Resuscitation

Andrew Tongs is the BHS resuscitation educator. He has a defined role in providing training and assessments for medical staff. This is particularly important for all medical staff that work in critical care and/or are a member of the MET or code blue teams. We have provided his pre reading materials. These are considered mandatory pre reading for the Emergency registrars, and ICU registrars and medical registrars.

Education sessions will be run face to face with simulation sessions, and these are of value if the didactic components of teaching are replaced by pre reading and preparation by professional and committed medical staff.

BHS Education resources

The pre reading is located on the website:

1. [ALS Algorithm 2012](#) presentation
2. [ALS drugs 2012](#) presentation
3. [Defibrillation and pacing 2012](#) presentation
4. [Paediatric ALS 2012](#) presentation

Organ and Tissue Donation

In the case of clinical triggers for donation being activated ring the intensivist on duty and/or Joanna Forteath, the BHS nurse donation specialist, on 0411 323 006. If the family raises organ donation, answer questions if trained to do so, otherwise refer to the organ donation specialists.

- Presentation of organ donation and clinical triggers.

Australian resuscitation council resources:

- [ARC basic life support](#)
- [ARC adult cardiopulmonary arrest](#)
- [ARC choking](#)
- [ARC Paediatric ALS 2011](#)
- [ARC neonatal flowchart](#)
- [ALSBLS competency assessment tool 2011 v4](#)
2. Major Trauma

Learning objectives

1. To be familiar with BHS protocols for trauma including trauma teams
2. Management of suspected cervical spine injuries
3. To understand the Victorian State Trauma System and how role of Ballarat Health Services in that system.

Pre reading


BHS Educational resources

- PowerPoint presentations;
  1. Trauma Overview
  2. Trauma clinical skills workshop slides
  3. Trauma scenarios
  4. Trauma basic self-directed tutorial
  5. The massive transfusion protocol

Other learning resources

- Major trauma advice and inter-hospital transfer guidelines
3. Cardiology - Chest Pain & Syncope

The cardiology session will examine contrasting clinical cases of chest pain that may be due to potentially lethal causes such as myocardial infarction or more benign causes such as costochondritis. Important features in the history that help discriminate different causes of dyspnea will be discussed along with appropriate initial investigations.

Learning objectives

1. To name the common and important medical conditions that cause chest pain and their characteristic features on history.

2. To rapidly diagnose and manage acute myocardial infarction

3. To interpret ECGs in myocardial ischaemia and arrhythmias.

4. To name the common and important medical conditions that cause syncope and their characteristic features on history and exam.

Pre reading


- Guidelines for the management of acute coronary syndromes

- Addendum to guidelines for the management of acute coronary syndromes

BHS Education resources

- PowerPoint presentations;
  1. Chest pain in the ED
  2. Syncope in the ED
  3. Syncope case series
  4. ECG Part 1 & Part 2
  5. Plueritic pain case & Just another case of palpitations
  6. Antiarrhythmics
Other learning resources

- BHS STEMI pathway - [ED presentation – July 2012](#)
- Guide for assessing cardiac patients - Evolving risk stratification: [Heart Foundation ACS treatment algorithm](#)
- *Short QT Syndrome (SQTS)*
4. Respiratory – dyspnea: asthma, pneumonia & pulmonary embolism

The respiratory session will examine contrasting clinical cases of dyspnea that will illustrate the principles of diagnostic reasoning. Important physical findings that help discriminate different causes of dyspnea will be discussed along with appropriate initial investigations.

Learning objectives

1. Be able to describe the differences and similarities in the medical history, physical examination and investigations of common or life threatening causes of dyspnea.

2. To manage asthma and pneumonia using best practice guidelines

3. To be able to use the Wells score & PERC rule in diagnosis of PE

Pre reading


BHS Education resources

- PowerPoint presentations;
  
  1. Respiratory dyspnea presentation
  2. Respiratory case series 1
  3. Respiratory case series 2
  4. A classic respiratory case

Other learning resources

- Well’s Criteria for Pulmonary Embolism
  

- National Asthma Council: Written asthma action plans.

- MDCalc Mobile PSI/PORT Score: Pneumonia Severity Index for Adult CAP

The neurology session will examine contrasting clinical cases of headache, seizures and dizziness that may be due to potentially lethal causes such as subarachnoid haemorrhage or more benign causes such as migraine. Important features in the history include establishing the timing of onset of symptoms and using eye witnesses.

Learning objectives

1. Understand the key differential diagnoses for headache
2. Understand use of ABCD² and ROSIER tools for TIA and stroke
3. Develop your diagnostic strategy for dizziness.
4. Develop your approach to seizures

Pre reading


BHS Education resources

- PowerPoint presentations:
  1. Headache
  2. Seizures
  3. Dizziness
- Self-directed tutorials:
  1. Lumbar puncture
  2. Acute migrane

Other learning resources

- Dealing with Dizziness by Dr Mark Paine from Australian Prescriber 2005 28/4. pg 94-97
- Tension headache review http://emedicine.medscape.com/article/792384-overview

Guideline approach to vertigo. MS = Multiple sclerosis; URI = Upper respiratory infection.

If the patient has experienced true vertigo, the next step is to determine whether the vertigo is of peripheral or central origin. Although the symptoms of central vertigo may not be severe, they are more likely to indicate potentially life-threatening disorders. The temporal pattern and precipitating causes can help to distinguish the different etiologies of vertigo (Table 231-3). Peripheral vertigo is more likely than central vertigo to be intense and to be associated with nausea, vomiting, diaphoresis, tinnitus, hearing loss, and photophobia. Central vertigo is more likely to be associated with neurologic symptoms and signs such as diplopia, dysarthria, and bilateral visual abnormalities. An associated headache or history of headache suggests migraine or a space-occupying lesion. Inquiry into history of head trauma and medications is required because these can precipitate episodes of dizziness or interfere with central adaptation.

6. Toxicology
In this session we will look at toxicology issues relating to deliberate self-harm. Other relevant information relating to self-harm can be found in the psychiatric topic.

Learning objectives
1. To comprehensively assess a patient presenting with overdose including common drugs such as paracetamol
2. To provide supportive care and definitive care (e.g. antidotes)
3. To manage toxicology presentations in the ED, including access to off site resources

Pre reading

BHS Education resources
- PowerPoint Presentations:
  1. Paracetamol toxicity
  2. Snakebite case series

Other learning resources - Snakebite
- Antivenom update from Australian Prescriber
- Case based discussion on snake bite authored by Dilhani Dona as part of the ACEM Certificate Emergency Medicine

Other learning resources - Poisoning
- Safe prescribing of opioids for persistent non cancer pain by Michael McDonough. Australian Prescriber Vol35 : No 1 : February 2012
- Guidelines for management of paracetamol poisoning
- Treatment Approaches for Users of Methamphetamine – A practical guide for frontline workers
- Management of Patients with Physostimulant Toxicity
7. Psychiatry, violence & aggression.
In these sessions we will use contrasting case studies of patients who have disturbed or challenging behaviours to explore how the medical interview, physical examination and investigations are used to determine a diagnosis (or differential diagnosis). An emphasis will be placed on performing a mental status examination in addition to the general examination. A compassionate approach and establishing rapport will be discussed.

Learning objectives
1. To recognise the need to perform a mental state examination to comprehensively assess a patient presenting with disturbed behaviour;
2. To recognize there are many organic causes of “psychiatric” presentations

Pre reading

BHS Education resources
- PowerPoint presentation:
  1. Mental state examination and psychiatric certification

  Other PowerPoint presentations available on the BHS intranet (access only available within in BHS facility);
  1. Violence in ED
  2. Psychiatric certification
  3. Mental health
  4. Mental state examination

- Behavioral Emergencies from life in the Fastlane

Other learning resources
- Managing aggressive and violent patients. Fulde et al Australian Prescriber 118 | Volume 34 | NUMBER 4 | AUGUST 2011 Articles

8. Surgery – Abdominal pain, back pain & renal colic

A systematic approach to evaluating the clinical findings leads to an appropriate differential diagnosis and the ability to formulate an appropriate management plan. It is important to exclude life threatening conditions, remember common things occur commonly, and non specific abdominal pain is common in young people.

Learning objectives

1. To appreciate the importance of a framework for a systematic approach to decision-making in the assessment of abdominal pain,
2. To appreciate that every patient does not need a CT or ultrasound.
3. To understand the most important decision for a surgeon to make is the need for an operation (see point 2)
4. To appreciate that decision making is different in elderly patients

Pre reading


BHS Education resources

- PowerPoint presentation;
  1. Abdominal Pain

Other learning resources

9. Minor trauma and Orthopaedics

In these sessions we will use case studies of patients who have presented to the ED including a radiology library. We are seeking help from HMOs to add to this library. Please email the name and UR number to jaycenc@bhs.org.au

Learning objectives

- A systematic approach to assessment of injuries
- Interpretation of radiographs in ED/orthopaedics
- Appropriate referral to fracture clinic using BOSSNET e-form and use of BHS guideline for diagnosis of scaphoid fractures.

Pre reading


BHS Education resources

- PowerPoint Presentation;
  1. Scaphoid fracture
- Other PowerPoint Presentations available on the BHS intranet (access only available within BHS facility);
  1. Lower Limb injuries
  2. Hand injury summary
  3. Blunt head injury in children
  4. Orthopaedic cases – Self-directed workbook

Other learning resources

- Childhood Fracture Management – RCH clinical guidelines and facts sheet
- Shoulder reduction techniques http://shoulderdislocation.net/videos
In the last few years the Emergency Department at Ballarat Health Services conducted several research projects on scaphoid fractures and in particular the role of early CT. We have published literature validating our clinical practice guideline.

The following journal articles on scaphoid fractures were conducted in the Emergency Department at Ballarat Health Services. They are available directly and on a website authored by Jaycen Cruickshank - www.scaphoidfracture.com.au

- **Scaphoid fractures - EMA**
- **Scaphoid fractures - CT in a CPG - Western Journal of Emergency Medicine**
10. Obstetrics and Gynaecology

In these sessions we will use contrasting case studies of patients who have presented to the ED and had a final diagnosis of ectopic pregnancy, miscarriage, and threatened miscarriage. The Department of Health though Western Health has developed a DVD Precious 10 which is recommended viewing for all emergency clinicians. The video is located in the ED administration office.

Learning objectives

1. To use a diagnostic approach that does not miss ectopic pregnancy
2. To manage women with bleeding in early pregnancy in an appropriate and compassionate way.
3. To understand appropriate use of β HCG and ultrasound, including consent for transvaginal ultrasound.
4. To manage hyperemesis gravidarum safely

Pre reading


BHS Education resources

- PowerPoint presentation;
  1. Bleeding in Early pregnancy
  2. PV Bleeding in 2\textsuperscript{nd} and 3\textsuperscript{rd} Trimester

Other learning resources

- DHS - Western Health video Precious 10
- Australian Red Cross: Anti-D Guidelines, and Important information for Rh(D) negative women
11. Sepsis and infectious diseases

Learning objectives
1. To recognize severe sepsis and understand early treatment plans.
2. Febrile neutropenia guidelines include early antibiotic administration
3. To understand importance of early recognition and treatment of meningococcal disease

Pre reading

BHS Education resources
- PowerPoint presentations;
  1. BHS ED Sepsis talk
  2. Sepsis Presentation from NSW Health

Other learning resources
- Sepsis toolkit from the NSW Government
- Educational video available for purchase regarding meningococcal disease from [http://www.meningococcal.org/](http://www.meningococcal.org/)
  a. A Preview: Managing Menigococcal Disease :[http://www.youtube.com/watch?v=ZUcWWjlhQ](http://www.youtube.com/watch?v=ZUcWWjlhQ)
12. Paediatrics in the ED.

Learning objectives
1. To recognize the seriously ill child
2. To manage appropriately common paediatric emergencies, including paediatric oncology issues
3. To manage paediatric oncology patients in consultation with our paediatric unit
4. To develop a safe patient centred approach to paediatric analgesia and sedation

Pre reading

BHS Education resources
- PowerPoint presentations;
  1. Assessment of the sick child
  2. Paediatric cases

Other learning resources
- The *Royal Children’s clinical guidelines* are an excellent resource to look up while working in the Emergency Department.
- *Childhood fracture Management* – RCH clinical guidelines, demonstration videos, x-ray examples and fact sheets.
- *EZ IO (Interosseous Needle) Instructions* from Brad Sobolewski
- *The Nightmare Neonate: Life threatening Events in the First month of Life*
- *The Critically Ill or Comatose Infant: An Organised Approach*
13. **Eyes, Ear Nose Throat, & Dental.**

**Learning objectives**

1. To manage common eye conditions, including removal of foreign body
2. To recognize and refer serious eye conditions
3. To learn some recognition and management of some common and serious dental emergencies and appropriate referral strategies
4. Additional training for E.N.T presentations

**Pre reading**


**BHS Education resources**

- **PowerPoint Presentation:**
  1. ENT
  2. Eyes in the ED

- Other **PowerPoint Presentations** available on the BHS intranet (access only available within BHS facility);
  1. Eye VAQs
  2. Red Eye
  3. ENT Foreign bodies
  4. Dental Emergencies

**Other learning resources**

- Antibiotic Therapeutic Guidelines (*eTG Complete* via Clinicians Health Channel) – Eye infections, oral and dental infections, respiratory tract infections: other
  1. These are VERY helpful as a guide when NOT to use antibiotics and contain excellent management and patient information resources.
14. Medical Emergencies

Learning objectives

1. Oncology – to manage febrile neutropenia correctly
2. To identify and manage diabetic emergencies
3. To refer appropriately to the medical registrar
4. To manage back pain presentations

Pre reading


BHS Education resources

- PowerPoint presentation;
  1. Thoracic and lumbar back pain

Other learning resources

- Australian Prescriber – information about drugs and therapeutics published by NPS MedicineWise
- Burns Management Guidelines
- Good anticoagulant practice from NPS MedicineWise
- http://www.scaphoidfracture.net.au/