

# BACTERIAL MENINGITIS

MODULE: ACUTE CARE

TARGET: FY1 & FY2 TRAINEES AND FINAL YEAR MEDICAL STUDENTS

**BACKGROUND:**

Prioritisation is extremely important in the initial assessment and management of patients with acutely altered levels of consciousness and seizures. Where meningitis is the cause, administration of antibiotics is time-critical. FY trainees should be able to work within and lead a team to safely assess and treat in a timely manner.

## RELEVANT AREAS OF THE FOUNDATION PROGRAMME CURRICULUM

<p><b>1</b> <b>Professionalism</b></p>	<p><b>1.4 Team Working:</b></p> <ul style="list-style-type: none"> <li>• Demonstrates clear and effective communication within the team</li> </ul> <p><b>1.5 Leadership:</b></p> <ul style="list-style-type: none"> <li>• FY2 demonstrates extended leadership role by making decisions and dealing with complex situations across a greater range of clinical and non-clinical situations</li> </ul>
<p><b>6</b> <b>Good Medical Practice</b></p>	<p><b>6.2 Evidence, guidelines, care protocols and research</b></p> <ul style="list-style-type: none"> <li>• Recognises, understands and follows appropriate guidelines</li> </ul>
<p><b>7</b> <b>Good clinical care</b></p>	<p><b>7.5 Safe prescribing</b></p> <ul style="list-style-type: none"> <li>• Prescribes drugs and treatments appropriately, clearly and unambiguously in accordance with Good Practice in Prescribing Medicines (GMC, 2008)</li> <li>• Uses the BNF plus pharmacy and computer-based prescribing-decision support to access information about drug treatments, including drug interactions</li> <li>• Performs dosage calculations correctly and verifies that the dose is of the right order</li> <li>• Chooses appropriate intravenous fluids as vehicles for intravenous drugs and calculates the correct volume and flow rate</li> <li>• Prescribes oxygen appropriately including to patients with the risk of carbon dioxide retention</li> <li>• Relates prescribing activity to available prescribing guidelines / audit data eg antibiotic usage</li> </ul> <p><b>7.7 Infection control and hygiene</b></p> <ul style="list-style-type: none"> <li>• Demonstrates correct techniques for hand hygiene with hand gel and with soap and water</li> <li>• Takes appropriate microbiological specimens in a timely fashion</li> <li>• Follows local guidelines / protocols for antibiotic prescribing</li> </ul> <p><b>7.9 Interface with different specialties and with other professionals</b></p> <ul style="list-style-type: none"> <li>• Understands the importance of effective communication with colleagues in other disciplines</li> </ul>

<p><b>8 Recognition and management of the acutely ill patient</b></p>	<p><b>8.1 Promptly assesses the acutely ill, collapsed or unconscious patient</b></p> <ul style="list-style-type: none"> <li>• Uses Airway, Breathing, Circulation, Disability, Exposure (ABCDE) approach to assessing the acutely unwell or collapsed patients</li> <li>• Uses the GCS or Alert, Voice, Pain, Unresponsive (AVPU) to quantify conscious level</li> <li>• Investigates and analyses abnormal physiological results in the context of the clinical scenario to elicit and treat cause</li> <li>• Uses monitoring (including blood glucose) to inform the clinical assessment</li> <li>• Asks patients and staff appropriate questions to prioritise care</li> <li>• Seeks senior help with the further management of acutely unwell patients both promptly and appropriately</li> <li>• Summarises and communicates findings to colleagues succinctly</li> <li>• Appropriately communicates with relatives/friends and offers support</li> </ul> <p><b>8.2 Responds to acutely abnormal physiology</b></p> <ul style="list-style-type: none"> <li>• Formulates treatment plan in response to acutely abnormal physiology taking into account other co-morbidities and long-term conditions</li> <li>• Administers and prescribes oxygen, fluids and antimicrobials as appropriate (see Good Clinical Care: Safe Prescribing and Infection Control)</li> <li>• Recognises when arterial blood gas sampling is indicated, identifies abnormal results, interprets results correctly and seeks senior advice</li> <li>• Plans appropriate action to try to prevent deterioration in vital signs</li> <li>• Reassesses ill patients appropriately after starting treatment</li> <li>• Recognises the indicators for intensive care unit review when physiology abnormal</li> </ul> <p><b>8.3 Manages patients with impaired consciousness, including seizures</b></p> <ul style="list-style-type: none"> <li>• Assesses conscious level (GCS or AVPU)</li> <li>• Treats ongoing seizures</li> <li>• Recognises causes of impaired consciousness and seizures and seeks to correct them</li> <li>• Recognises the potential for airway and respiratory compromise in the unconscious patient (including indications for intubation)</li> <li>• Understands the importance of supportive management in impaired consciousness</li> <li>• Seeks senior help for patients with impaired consciousness in an appropriate and timely way</li> </ul>
<p><b>11 Investigations</b></p>	<p><b>11.1 Investigations</b></p> <ul style="list-style-type: none"> <li>• Requests investigations appropriate for patients' needs in accordance with local and national guidance to optimise the use of resources</li> <li>• Seeks out, records and relays results in a timely manner</li> <li>• Plans/organises appropriate further investigations to aid diagnosis and/or inform the management plan</li> <li>• Provides concise, accurate and relevant information and understands the diagnostic question when requesting investigations</li> <li>• Understands what common tests (Table 1) and procedures entail, the diagnostic limitations and contraindications, in order to ensure correct and relevant referrals/requests</li> <li>• Interprets the results correctly within the context of the particular patient/presentation e.g. plain radiography in a common acute condition</li> <li>• Prioritises importance of investigation results</li> </ul>

## INFORMATION FOR FACULTY

### LEARNING OBJECTIVES:

- ABCDE assessment and initial management of patient with altered conscious level and seizures (to include general supportive treatments and specific drugtherapies)
  - Appropriate call for help and concise transfer of information
- (+/- Management of status epilepticus)

### SCENE INFORMATION:

- Location: Emergency Department
- Expected duration of scenario: 15 mins (a) / 10 mins (b)  
 Expected duration of debriefing: 25 mins (a) / 15 mins (b)

### EQUIPMENT & CONSUMABLES

- Mannequin: On ED trolley, with full O2 cylinder
- Stocked airway trolley  
(Specifically: Airway adjuncts (OPA, NPA))
- O2 and selection of masks incl. NRB
- Monitoring equipment (SpO2, ECG, NIBP)
- Syringes, flushes, IV fluid and giving sets
- Simulated drugs (Benzodiazepines, Phenytoin, Levetiracetam, antibiotics as per local protocols)
- Blood bottles, culture bottles, request forms
- Observation chart, medical note paper, drug chart
- Stocked crash trolley
- Mock-up anaesthetic equipment

### PERSONS REQUIRED

FY Trainee to lead scenario  
 Emergency Department assistant staff (Nurse, FY, Medical student)  
 Medical Registrar (If requested)  
 ITU Registrar (If requested)

### PARTICIPANT BRIEFING: (TO BE READ ALOUD TO PARTICIPANT)

1. Scene-setting: Recognition and initial management of the acutely unwell patient are essential skills to develop during FY training. Today we would like one of you to assess a patient in the Emergency Department who has been brought in by his (her) flatmates. Please assess the patient methodically and treat the problems / symptoms that you find.
2. Assistance: An assistant will be present as the scenario begins (faculty will tell you who this is and what experience they have). If other (appropriate) help is needed at any stage, ask for it (the faculty will let you know how to request it).
3. The scenario will run until a natural conclusion, after which we will regroup to discuss the scenario and any related subjects that the group raises. This is not a test of the person who participates in the scenario and they will not be judged in any way on their performance.
4. We may then move back to the manikin again for the next steps in the management of the patient, followed by a further discussion of any matters that arise.

**'VOICE OF MANIKIN' BRIEFING:**

Your name is Keith (Karen) Williams. You are a 19 year old student. You are initially agitated, confused, mumbling and you are not able to properly answer any questions. You don't tolerate bright lights and you have a stiff neck. You gradually deteriorate as per the flowchart and will have a seizure.

**IN SCENARIO BRIEFING:**

Mr Keith (Miss Karen) Williams is a 19 year old student who didn't turn up to class this morning. His (her) friends called to the flat and found him (her) agitated, confused and unable to recognise them. They have brought him (her) to the Emergency Department.

Please role play an Emergency Department nurse or FY1 doctor as directed by the faculty. Please assist the FY doctor who comes to assess the patient in the Emergency Department.

If asked, tell the FY doctor that the patient has no past medical history, takes no medications and has no allergies (according to friends).

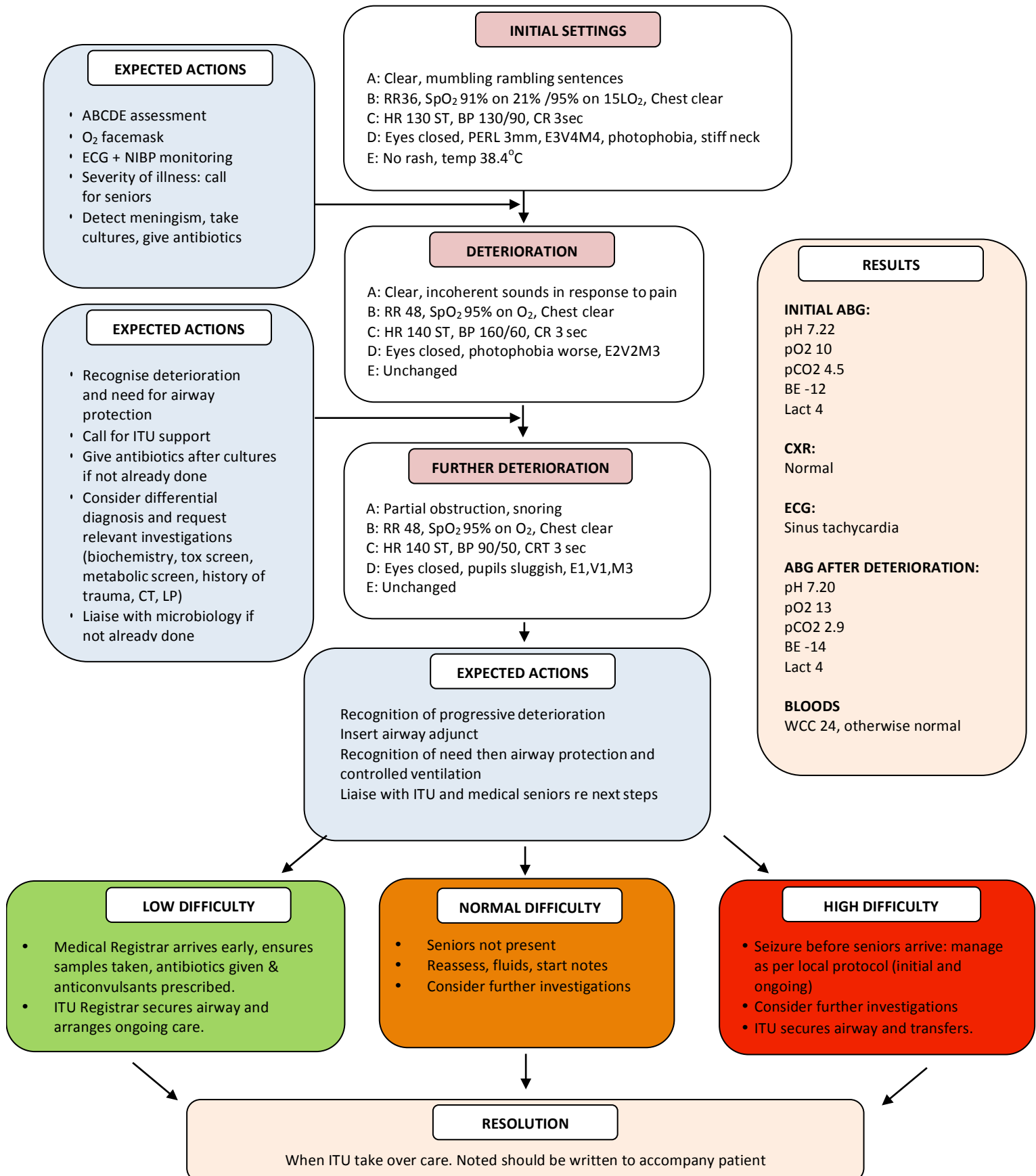
**ADDITIONAL INFORMATION**

The main focus of the first part of this encounter is the timely suspicion of bacterial meningitis.

If the participant doesn't recognise this and doesn't give antibiotics then the patient could deteriorate and progress to seizures, however, this may make the scenario too complex. The focus could inadvertently shift to management of status epilepticus. Instead, the medical / ITU senior medical staff may arrive to continue care.

If the participant is doing really well and faculty wish to expand the clinical challenge, then the patient could deteriorate and progress to seizures before the senior medical staff arrive.

CONDUCT OF SCENARIO



## DEBRIEFING

### POINTS FOR FURTHER DISCUSSION:

- Recognition of signs of meningitis
- Time-critical administration of antibiotics: prescribing, delegating, ensuring drug administered
- ABCDE assessment and supportive management
- Investigations in suspected meningitis: when to CT, when to do LP
- Recognition of severity of illness and appropriate call for senior assistance

### DEBRIEFING RESOURCES

1. Local antibiotic guidelines
2. NICE clinical guideline 102 on meningitis (in children and young people younger than 16 years) available at <http://www.nice.org.uk/nicemedia/live/13027/49339/49339.pdf>
3. Booklet from Meningitis Research Foundation for doctors in training includes a review of the condition and a number of case presentations. It is available at <http://www.meningitis.org/assets/x/50156>

**INFORMATION FOR PARTICIPANTS**

**KEY POINTS:**

- Early recognition of meningism
- Remember not all patients with bacterial meningitis will have a rash

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**PARTICIPANT REFLECTION:**

What have you learnt from this experience? (Please try to list 3 things)

How will your practice now change?

What other actions will you now take to meet any identified learning needs?

**PARTICIPANT FEEDBACK**

Date of training session:.....

Profession and grade:.....

What role(s) did you play in the scenario? (Please tick)

Primary/Initial Participant

Secondary Participant (e.g. 'Call for Help' responder)

Other health care professional (e.g. nurse/ODP)

Other role (please specify):

Observer


	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
I found this scenario useful					
I understand more about the scenario subject					
I have more confidence to deal with this scenario					
The material covered was relevant to me					

Please write down one thing you have learned today, and that you will use in your clinical practice.

How could this scenario be improved for future participants?

(This is especially important if you have ticked anything in the disagree/strongly disagree box)

**FACULTY DEBRIEF – TO BE COMPLETED BY FACULTY TEAM**

What went particularly well during this scenario?

What did not go well, or as well as planned?

Why didn't it go well?

How could the scenario be improved for future participants?