# Sepsis (Ward Based)
## Scenario 1 – Biliary Sepsis

<table>
<thead>
<tr>
<th>Course lead</th>
<th>Thomas Simpson</th>
<th>Faculty</th>
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</thead>
<tbody>
<tr>
<td><strong>Course / Curriculum</strong></td>
<td>Sepsis (Ward based)</td>
<td>Target Delegates</td>
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<tr>
<td><strong>Scenario name</strong></td>
<td>Biliary Sepsis</td>
<td>Group Size</td>
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<table>
<thead>
<tr>
<th>Patients Name:</th>
<th>Mary Seacombe (Z780005)</th>
<th>Patients Age:</th>
<th>64 – D.O.B. 4/3/1960</th>
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</thead>
<tbody>
<tr>
<td><strong>Major Problem</strong></td>
<td>Sepsis: Wrong source Biliary Sepsis</td>
<td><strong>Suggested NTS / Technical</strong></td>
<td>Leadership (&amp; delegation) Communication Situational awareness Escalation Anticipating and planning Care and Compassion</td>
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<tr>
<td><strong>Learning Goal</strong></td>
<td>Medical / Clinical ABCDE, identifying worsening sepsis Deteriorates~ more hypotensive, becoming shocked Sepsis 6 (O2,Abx, BC, IVF, Lac/Hb, UO) Differential Diagnosis ?UTI or Bil sepsis Refer to CCRT SpR ?HDU/ITU and inotropes</td>
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<tr>
<td><strong>Narrative Description</strong></td>
<td><strong>ACUTE:</strong> 64 year old female with abdominal pain and pyrexia transferred to the ward following a diagnosis of UTI. Patient develops worsening sepsis (pyrexia/tachycardia/tachypnoea/hypotension) and becomes confused. <strong>Past medical history:</strong> Previous UTI, hypertension, gallstones. <strong>Drug history:</strong> Amlodipine <strong>Allergies:</strong> nil known <strong>Social history:</strong> Minimal EtOH, lives with husband</td>
<td></td>
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<tr>
<td><strong>Staffing</strong></td>
<td>Faculty Control Room: 1 x technician 1 x patient voice 1 x debriefer Faculty Role Players: 1 x Nursing assistant (plant) 1 x senior nurse or doctor (help)</td>
<td><strong>Candidates</strong></td>
<td>1-2xStaff Nurse 1x doctor Or 1x SNP/ANP/Senior nurse</td>
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<tr>
<td><strong>Case Briefing</strong></td>
<td>To All Candidates A 64 year old female has just been admitted to the ward with a diagnosis of UTI. She has had anti-biotics in ED. She is being supervised/ cared for by a Nursing assistant and you are on your way to admit her to the ward.</td>
<td><strong>To Role Players</strong></td>
<td>Novice NA, allocated to care for patient and report upwards when patient becomes more unwell – understand importance of observations and their</td>
</tr>
<tr>
<td>Manikin preparation</td>
<td>Female patient sat up in bed, in gown or pyjamas. Grey hair wig Not attached to any monitoring, IV access in-situ Wearing name band. Cup of tea/water in front of her.</td>
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<tr>
<td>Room set up</td>
<td>As per routine ward. Newspaper.</td>
<td></td>
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<tr>
<td>Simulator operation</td>
<td>Patient is mildly confused and is complaining of abdominal pain (right upper quadrant of abdomen). Patient quickly deteriorates with increasing respiratory rate, heart rate and dropping blood pressure. Also has a temperature and becomes more confused/agitated. She will respond to delivery of fluids and any appropriate intervention e.g. anti-biotics/paracetamol, but her blood pressure will not go above 90mmHg systolic. She becomes more drowsy and less responsive as she deteriorates, with falling of blood pressure if no intervention given.</td>
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<tr>
<td>Notes to faculty</td>
<td>The underlying cause is biliary sepsis. The purpose of the scenario is to reinforce ABCDE assessment and early recognition of a deteriorating adult patient, with a particular focus on the delivery of immediate sepsis management. Delegates are expected to use an early warning score system and initiate necessary interventions such as intravenous fluids and anti-biotics. They are expected to call for help early utilising a handover tool such as SBAR/SPAR. The scenario will end with arrival of help, either a senior nurse or doctor and a structured handover.</td>
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### Observations:

**Initial**

<table>
<thead>
<tr>
<th></th>
<th>NEWS score</th>
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<tbody>
<tr>
<td>HR</td>
<td>105</td>
</tr>
<tr>
<td>O2 /sats</td>
<td>95%</td>
</tr>
<tr>
<td>BP</td>
<td>105/60</td>
</tr>
<tr>
<td>Temp</td>
<td>37.4</td>
</tr>
<tr>
<td>RR</td>
<td>22</td>
</tr>
<tr>
<td>UOP</td>
<td>Has no record Fluid BC not started but has stated they passed urine in 24 hours</td>
</tr>
<tr>
<td>AVPU</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Total NEWS Score</td>
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**Within 1-2 minutes**

<table>
<thead>
<tr>
<th></th>
<th>NEWS score</th>
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<tbody>
<tr>
<td>HR</td>
<td>120</td>
</tr>
<tr>
<td>O2 sats</td>
<td>94%</td>
</tr>
<tr>
<td>BP</td>
<td>80/50</td>
</tr>
<tr>
<td>Temp</td>
<td>38.5</td>
</tr>
<tr>
<td>RR</td>
<td>30</td>
</tr>
<tr>
<td>UOP</td>
<td>Has no record FBC not started</td>
</tr>
<tr>
<td>AVPU</td>
<td>V</td>
</tr>
<tr>
<td></td>
<td>Total NEWS Score</td>
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**5 minutes – no intervention**

<table>
<thead>
<tr>
<th></th>
<th>NEWS score</th>
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<tbody>
<tr>
<td>HR</td>
<td>140</td>
</tr>
<tr>
<td>Sats</td>
<td>90%</td>
</tr>
<tr>
<td>BP</td>
<td>70/40</td>
</tr>
<tr>
<td>Temp</td>
<td>38.5</td>
</tr>
<tr>
<td>RR</td>
<td>28</td>
</tr>
<tr>
<td>AVPU</td>
<td>U</td>
</tr>
<tr>
<td></td>
<td>Total NEWS Score</td>
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**BM = 6.8**

- If given oxygen – sats 98%
- If given fluids – BP stable
- Cap refill 4

**If examined – Voice RUQ pain**

URINE DIPSTICK negative

Patient becomes confused/drowsy

- If fluids given blood pressure rises to 90mmHg systolic, HR 120.
- If paracetamol given – temp 37.8

12 lead ECG available

Unresponsive

Same responses as above.

Patient becomes confused/drowsy
Patient Role

Scenario
You are a 64 year old woman who has developed fevers and abdominal pain and you become increasingly confused and unwell during the scenario.
If asked, you have passed urine today in ED but only a small amount.

After a period of confusion and fever, you become drowsy and then unresponsive. You consistently complain of pain and if asked, say it is in your ‘tummy’. If examined you are very tender over the liver area (Right upper quadrant).

You prefer to be called Mary and hope that the doctors can sort you out quickly as you want to get back to looking after your husband (John) who is unwell with bowel cancer – you work as a legal secretary and have been married for 35 years with 3 children and 3 grandchildren.

Useful things to say:

‘My stomach hurts’
‘Where am I?’
‘Why am I at King’s?’
‘Where’s John? He is here somewhere’

Remember to express pain if your right upper quadrant of your abdomen is examined.

Underlying diagnosis
Biliary Sepsis

Past medical history: Previous UTI, hypertension, gallstones.
Drug history: Amlodipine
Allergies: nil known
Social history: Works as a legal secretary. Minimal EtOH, lives with husband (John).
NA Role (Embedded practitioner)

Scenario
64 year old woman is newly arrived on an admission ward. She has been diagnosed with a UTI and started on oral antibiotics in A+E. The NA’s have been admitting her to the ward (obs, cup of tea etc), but have noticed that she is getting a bit confused and seems unwell.

Underlying diagnosis
Biliary sepsis

Past medical history: Previous UTI, hypertension, gallstones.
Drug history: Amlodipine
Allergies: nil known
Social history: Minimal EtOH, lives with husband (John). Married for 35 years.

Instructions
You are a nursing assistant – you know where things are and will help if asked to do things.

If asked to do a urine dipstick you may say that she has already had one in ED, and the result is in the notes.
Medical Role (Medical SpR or CCRT (medical emergency team))
Registrar – if called

Scenario
Mary Seacombe is a 64 year old woman on the medical admissions unit.

If you are the medical registrar - You are aware of her as A+E referred her to you with a UTI. As far as you are aware they were waiting to do a urine dipstick and had started her on trimethoprim.

If you are the CCRT registrar you are not aware of the patient and will need some history.

She is becoming more unwell on the ward with signs of severe sepsis (pyrexia, tachycardia, tachypnoea and hypotension) with poor response to fluids.

Underlying diagnosis
Biliary sepsis

Past medical history: Previous UTI, hypertension, gallstones.
Drug history: Amlodipine
Allergies: nil known
Social history: Minimal EtOH, lives with husband (John). Married for 35 year

Instructions
Suggest they check whether urine dipstick has been done and anti-biotics given.
Urine dipstick is negative (therefore UTI unlikely) and patient given oral trimethoprim.

Suggest the patient may have another source of infection and is now overtly septic.
Check implementation of Sepsis 6
- ABG to assess lactate and Hb
- IV fluids – at least 500mls requested to be given. Ideally 1 litre immediately.
- Blood cultures taken
- Antibiotics switched to IV broad-spectrum (Co-amoxiclav and Gentamicin acceptable. Cefuroxime and Metronidazole preferable. If any debate, suggest discuss with microbiology)
- On high-flow oxygen
- Patient needs urine output measuring – suggest they request a catheter

The patient will need to be referred to the CCRT registrar for consideration for a critical care bed and inotropes.
Results of Investigations

**Bloods:**

CRP 120

Creatinine 120 (baseline not known)
Sodium 135
Potassium 4.0

WBC 17
Neutrophils 15.6
Lymphocytes 1.0
Platelets 160

Hb 130

**Gases:**

ABG
pH 7.33
pCO2 4
pO2 10
HCO3 17
BE -6
Lactate 4.1

**Imaging:**

Chest xray - normal

**Urine dipstick:**

+ve for protein
Negative for everything else.
Guide to the debrief:

Description phase:

It is often useful to bring out whether there was any check for a urine dipstick result if it is not discussed.

‘Did we see any test results?’
‘Did we see any results that suggested a UTI?’

Transition phase:

‘This scenario was designed to show a patient in septic shock due to biliary sepsis, misdiagnosed as a UTI at presentation.’

In this first transition phase it is useful to ‘lead’ the participants through the individual items of the Sepsis 6 and to decide as a group whether it was:

Done
Discussed and would have happened/was about to happen
Discussed/mentioned but not about to happen/not clear
Not mentioned

Emphasise that the scenario only lasted X minutes and in reality they have an hour to complete the sepsis 6, but if there were TECHNICAL reasons why elements were not done, now is a good time to discuss this.

In the transition phase highlight the need to start the sepsis screening process and implementation of the Sepsis 6 when a patient with an infection becomes more unwell.

Also highlight the fact that initial diagnoses are not always correct, particularly when the working diagnosis may preceed the tests required to confirm that diagnosis (eg, urine dipstick done AFTER UTI diagnosis made, but not yet factored in).

Please also refer to the learning cue card for transition with the Sepsis screening tool.

Analysis:

In this first analysis the most common discussions have been centred around stress, situational awareness and communication.

The most common non-technical skills which have been coming up have been:
Awareness and management of Stress
Sharing the mental model
Learning Cue Card for Transition:

Sepsis Screening Tool

My patient looks unwell
or
Their NEWS is 5 or over

Are any 2 of the following present

- Temperature > 38 or < 36
- Respiratory rate > 20 per min
- Heart rate > 90 per min
- Acute confusion/reduced consciousness
- Blood sugar (Non-diabetic) > 7.7

RED FLAGS?

- Systolic BP < 90 mmHg
- Lactate > 2
- Heart rate > 130 per min
- Respiratory rate > 25 per min
- Oxygen sats < 91% on air
- Reduced consciousness
- Purpuric rash

1 or more = SEVERE SEPSIS

Could this be infection?
Complete EPR Sepsis Bundle

START THE SEPSIS SIX WITHIN SIXTY MINUTES

1. High flow oxygen unless contraindicated
2. Blood cultures - consider source control
3. Intravenous antibiotics within 1 hour
4. Intravenous fluid bolus if hypotensive
5. FBC/UE/Clotting and serial lactate
6. Hourly urine output

Inform senior team member (ST3+) and SNP
Call CCRT 2058 (Mon-Fri 8am-8pm) or 0610 24:7

As well as using the severe sepsis screening tool please emphasis the following features of this scenario:

- The initial diagnosis was incorrect and the initial choice of antibiotics was incorrect therefore…
- Always ensure you have reviewed the source of sepsis and the choice of antibiotics when reviewing a septic patient, especially when they are not responding
- If starting new anti-biotics, especially when a patient is unwell, ensure that you write a dose for immediate treatment as well as the regular doses.
- If there is concern about administering immediate antibiotics which have potential interaction with prior anti-biotics (eg. Switching gentamicin to amikacin) then the situation should be discussed with a microbiologist urgently.

The prolonged hypotension means that the patient may need inotropes and they should certainly be referred to the critical care response team/CCRT registrar.