CASE SCENARIO – FACILITATOR INFORMATION

The purpose of this activity is for the participant to demonstrate their knowledge of COMPASS principles in a simulated patient case scenario.

LEARNING OUTCOMES:

- Recognise the deteriorating Paediatric patient
- Initiate appropriate and timely interventions
- Demonstrate effective communication (ISBAR)

EXPLANATION OF HOW TO RUN CASE SCENARIO:

Prior to beginning the scenario explain to the participants that this is a low fidelity simulation/role play. The participants should try as much as possible to simulate (verbally) what they would really do on the ward.

Allocation of roles.

- There is one “Actor” card. This participant will interact with the “players” as directed on the “Actor” card
- There are several “player” cards
- Start by allocating the RN1 player card

You can allocate further roles and hand out appropriate player cards as the scenario progresses:

- Junior Medical Officer /Intern
- Registrar

Try to include all participants in the role play.

The first “player” card has information that the participant should read out to the group at the beginning of the scenario. When each new “player” joins the role play they should read out their “player card”.

The facilitator may prompt and direct the participants as required. Note that all participant contributions are valuable and should be heard within the group.

Other useful materials that can help to guide participants:

- Oxygen delivery chain (recognise deteriorating patient and understand why observations have changed)
- ISBAR chart/forms (for communication during role play)
- PEWS escalation process (appropriate and timely interventions)

Materials required for this scenario:

- Pt chart folder, including Observation charts
- Paediatric “Sepsis Kills” guide

_The facilitator can hand these materials out to participants as the role play progresses._
SCENARIO:

Scenario overview: facilitator reads out the following (in **bold**) to the group

Miffy is a 14 month old baby.
Miffy attended the ED with her parents yesterday with a 2 day history of a cough, fever and vomiting.
Miffy was alert and interactive, she had SaO2 96% on room air and mild effort of breathing. Her temperature was 39.2 °C. (PEWS 2)
Miffy was diagnosed with Right lower lobe pneumonia by the Paediatric Registrar and sent home on oral antibiotics and follow up with the GP.
Miffy’s parents have represented to ED late the next evening with concerns about Miffy.

**PMHx-**
- Born at term, vaginal delivery
- Up To Date with immunizations
- Normal growth and developmental milestones achieved
- NKA
- Wt 11kg

*Invite Actor and Player One to read out their cards to start the scenario.*

*Explain to the participants that they may ask the “patient parent/guardian” or the facilitator questions to try and work out what is going on*

**During the scenario:**

If Player 1 needs prompting:

1. **What assessments would do on this patient?**
   - Vital Signs (*look at observation chart/what do vital signs indicate?*)
   - General assessment - What does Miffy look like? (*mottled, cool extremities, cap refill > 3 secs, febrile, drowsy*)
   - Respiratory effort – (*intercostal recession, nasal flaring, tachypnoea*)
   - Neurological status - (*Alert*)
   - Capillary refill? (*> 3 secs*)
   - Urine output (*how many wet nappies?*)
   - ? BGL (*3.6mmol/l*)

2. **What questions would you ask this patient/patient’s carer?**
   - How does Miffy seem to you?
   - How has Miffy’s condition changed since yesterday?
   - What other sources of information do you have (*family, progress notes from yesterday*)
3. Who would you notify? Why?
   - PEWS 7 – Registrar to review, notify Consultant
   - Team leader or CNC

The RN should discuss the case face-to-face with the Registrar
Communication should be clear expressing concerns and what he/she would like the RMO to do (use ISBAR)

Registrar (player 2) enters the role play – read from card

4. What information do you require from the RN?
   - Vital Signs
   - Brief history

5. What assessment would you do? (Prioritise)
   - ABC
   - Respiratory examination (look, listen, feel)

6. What is your management plan for this patient?
   - Oxygen
   - Septic workup (MSU, CXR, bloods, LP)
   - IV access + fluid bolus
   - Antibiotics (within 1 hour)
   - How do you assess the hydration of this child? Cap refill, urine output, fontanelles, BP and heart rate, skin turgor

7. What would you do if the patient does not respond?
   - Seek help
   - MET
   - Nursing team leader or CNC
   - Contact Registrar and/or Consultant
   - Consider ICU involvement

During the role play the facilitator may ask the participants –
   - How often should observations be done?
     - ½ hourly for 1 hour then hourly for 4 hours if the PEWS improves
     - Minimum of hourly while on O2
What do you think may be going on with this patient?
Explain the observations using the oxygen delivery chain

**Group discussion/reflection at the end of the scenario**

- What do you think went well?
- What could you do differently next time?

**The important things to get across in this case are:**

Miffy is a 14 month old child with pneumonia. She has returned to the ED the day after her initial presentation with **signs of sepsis**.

**Management should include:**

Refer participants to SEPSIS KILLS guidelines

**RECOGNISE**
- Risk Factors Miffy has for sepsis
  - Deteriorating despite treatment
  - New signs of toxicity
  - High level of parental concern

**RESUSCITATE** (within 60 minutes)

- Oxygen
- Full septic workup – blood cultures/serum lactate
- IV access – IV fluids
- Prompt administration of antibiotics (Within 1 hour)
- Monitor vital signs and urine output

**REFER for rapid senior clinical review**
Physiological changes reflected in the vital sign readings:

- Arterial saturation has fallen due to airway constriction limiting the oxygen entering the lungs

- Decrease in arterial saturation and arterial O2 content leads to an increase in heart rate to try to increase cardiac output and therefore oxygen delivery (stimulation from sympathetic nervous system)
- Increased effort of breathing

- The release of Cytokines (part of the inflammatory process to fight infection) results in:
  - Vasodilatation, this causes “pooling” of blood in the periphery and drops the venous return to the heart.
  - The drop in venous return causes a drop in stroke volume, causing a drop in cardiac output despite a compensatory increase in HR to attempt to increase Cardiac Output
  - increased capillary permeability

- With a drop in cardiac output, there is a drop in oxygen delivery, this leads to an increased respiratory rate because Miffy has become hypoxic which stimulates respiratory centre to increase respiratory rate
- An increase in effort of breathing and HR can lead to eventual tiring of the child, leading to a decrease in RR

- As the cardiac output falls, there is an increase in peripheral vascular resistance to maintain BP. In children this compensation is very pronounced as BP often stays normal until they arrest from hypovolaemia. Without a baseline BP a subtle drop in BP may be more difficult to detect.

Information noted from patient charts and results:

- Increased respiratory rate and Effort Of Breathing
- Increased heart rate
- Cap refill > 3 secs
Player Card 1 - RN

Please read out the wording in **bold** when scenario commences.

I am the RN working in the Paediatric area of the Emergency Department. The triage nurse has just brought Miffy in to my area for assessment.

What I know about Miffy:

- Miffy is a 14 month old, previously healthy baby
- She was diagnosed with pneumonia yesterday and sent home on oral antibiotics

What do you do next?

- Talk to patient/carer
- Perform observations
- Assessment (look at vital signs, do you need any other information? Ask patient/carer)
- Do you need to refer this patient for review?
Case Study 3 – Paediatrics – Miffy

Actor Card - Patient’s mother – Mrs Rabbit

Please read out the wording in bold when scenario commences.

I am Mrs Rabbit, Miffy’s mum.

If asked:

- **Why did you bring Miffy back to the Emergency Department?** She has been really sleepy all day, and this evening she seemed to be struggling to breathe and looked very white. She is just not herself at all; she doesn’t even want her favourite toy.

- **Has Miffy been drinking fluids today?** Not really, she doesn’t seem interested in anything.

- **How many wet nappies has she had since last night?** Not many – I think I have changed her twice, but the nappies have only been a bit damp

- **Has Miffy had a fever?** Yes, she has been very hot. I have been giving her panadol, but it doesn’t seem to help

- **Has Miffy had the medication/antibiotics prescribed yesterday?** I have been giving Miffy her medicine, but she did vomit after the lunchtime dose.

- **What does Miffy look like?** Pale, cool hands and feet. Not interested in anything around her. Breathing fast. She seems to whimper when I try to wake her up.
You are the Paediatric Registrar working nights. You are admitting a child in Paeds High Care when you are called to review this patient.

The RN will try to discuss the case with you using ISBAR. Allow the RN to finish before responding.

**THEN**

How do you respond?

What do you do next?

**ROLE-PLAY YOUR NEXT ACTIONS.**
<table>
<thead>
<tr>
<th></th>
<th>15/9 0930hours</th>
<th>16/9 2145hrs</th>
<th>Reference range</th>
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<tbody>
<tr>
<td>Hb</td>
<td>134</td>
<td>130</td>
<td>107-136 g/L</td>
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<tr>
<td>WCC</td>
<td>14.1</td>
<td>21.3</td>
<td>4.9 – 12.8 x10^9/L</td>
</tr>
<tr>
<td>HCT</td>
<td>0.37</td>
<td>0.32</td>
<td>0.31-0.38 L/L</td>
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<tr>
<td>CRP</td>
<td>10.3</td>
<td>25.6</td>
<td>mg/L &lt; 6.0</td>
</tr>
<tr>
<td>Lactate</td>
<td></td>
<td>3.9</td>
<td>&lt; 3.5mmol/L</td>
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### Case Study 3 – Paediatrics – Miffy

#### Miffy's First Presentation

<table>
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<tr>
<th>Date</th>
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</tr>
</tbody>
</table>

**Respiratory Rate**

- Normal: 36-45 breaths per minute
- Moderate: 46-60 breaths per minute
- Severe: >60 breaths per minute

**Oxygen Saturation**

- Normal: 90-100%
- Moderate: 80-89%
- Severe: <80%

**Blood Pressure**

- Normal: 90-140 mmHg
- Moderate: 141-160 mmHg
- Severe: >160 mmHg

**Temperature**

- Normal: 37°C
- Moderate: 37.1-38°C
- Severe: >38°C

**VITALS**

- **Heart Rate (BPM)**
- **Respiratory Rate (RR)**
- **Oxygen Saturation (%)**
- **Blood Pressure (mmHg)**
- **Temperature (°C)**

**Paediatric Early Warning Scores (PEWS)**

<table>
<thead>
<tr>
<th>PEWS</th>
<th>Nitty</th>
<th>Escalate</th>
<th>Initial hospital event</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>RN</td>
<td>60 minutes to review within 10 minutes</td>
<td>RN</td>
</tr>
<tr>
<td>5</td>
<td>RN and RMO</td>
<td>60 minutes to review within 10 minutes</td>
<td>RN and RMO</td>
</tr>
<tr>
<td>6</td>
<td>RN and Registrar</td>
<td>60 minutes to review within 10 minutes</td>
<td>RN and Registrar</td>
</tr>
</tbody>
</table>

**Alert Criteria**

- **Patient is unresponsive**
- **Respiratory distress**
- **Hypotension**
- **Vasoactive drugs**
- **Electrolyte abnormalities**
- **Seizures**

**Guide for Assessing Level of Consciousness (AVPU)**

- **Alert**: Awake and alert
- **Voice**: Responds to verbal stimuli
- **Pain**: Responds to painful stimuli
- **Unresponsive**: No response to stimuli

**MET Criteria**

- **Neonatal MET**: If <10 months and <10 kg
- **Paediatric MET**: If >10 months or >10 kg

**Clinical Indications for Notifying Paediatrician**

1. **Seizures**
2. **Respiratory distress**
3. **Severe \( \Delta \) in oxygen saturation

**Further Reading**

MIFFY second presentation

### Paediatric Early Warning Scores (PEWS)

#### PEWS Calculation Table

<table>
<thead>
<tr>
<th>PEWS</th>
<th>Notify</th>
<th>Escalate</th>
<th>Intra hospital transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2-3</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### Effect of Breathing

- Stridor, accessory muscle use, recession, tachypnoea, nasal flaring, grunting, gasping
- Normal = nil of the above criteria
- Minor = 1 of the above criteria
- Moderate = 2 of the above criteria
- Severe = 3 or more of above criteria

#### Guide for assessing Level of Consciousness using AVPU tool

<table>
<thead>
<tr>
<th>AVPU</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert</td>
<td>4</td>
</tr>
<tr>
<td>Voice</td>
<td>3</td>
</tr>
<tr>
<td>Pain</td>
<td>2</td>
</tr>
<tr>
<td>Unresponsive</td>
<td>1</td>
</tr>
</tbody>
</table>

#### MET Criteria

**Respiratory Rate**
- Rate 5-30 breaths/minute
- Rate 31-39 breaths/minute
- Rate 40 breaths/minute or more

**Temperature**
- Rectal, Axillary, Oral
- Normal: 36.5°C - 37.5°C
- Low: < 36.5°C
- High: > 37.5°C

**Systolic Blood Pressure**
- Normal: 80 mmHg - 105 mmHg
- Low: < 80 mmHg
- High: > 105 mmHg

**Level of Consciousness**
- Alert
- Voice
- Pain
- Unresponsive

**Central Venous Return**
- < 5 cm
- 5 - 10 cm
- > 10 cm

**Tidal Volume (TV)**
- Normal: 5 ml/kg
- Low: < 5 ml/kg
- High: > 10 ml/kg

**Met Criteria (for 8.7 for MET)**

**Neonatal:**
- Respiratory, sleep, central nervous system
- Severe somnolence
- Auditory threat
- Respiratory or cardiac arrest
- Met Criteria (for 8.7 for MET):
- Respiratory, sleep, central nervous system
- Severe somnolence
- Auditory threat
- Respiratory or cardiac arrest