COMPASS

Early Recognition of the Deteriorating Patient
Recognition of the Deteriorating Patient

THE PROCESS:

- Vital signs performed
- Interpreted by nurse
- Communicate
- Interpreted by doctor
- Timely & appropriate review
- Timely & appropriate management
- Timely & appropriate management
Recognition of the Deteriorating Patient

"I think you should be more explicit here in step two."
What we are doing today?

- Pilot & Results
- Vital Signs & Physiology
- Observation Chart & Escalation Plan
- Communication, management plan & team work

Coffee & Tea

- Case studies
Learning Outcomes

- Link physiology with vital sign measurements
- Recognise the deteriorating patient
- Initiate appropriate and timely interventions utilising “MEWS” escalation process.
- Deliver more effective communication - utilising the “ISBAR” method of communication.
Early Recognition of the Deteriorating Patient (ERDP) is an initiative resulting from the work of the ACT Health Clinical Review Committees.

Clinical assessment & management of patients was found to be the number one risk through work conducted by: focus groups, audits and a literature review.
Issues from audit

- 76 patients
- RR documentation: 16 – 60%
- 9 patients fitted MET criteria, 1 called
Snapshot

- Systolic 70 at 0525, next checked 1100 hrs (over 5 hours)
- In notes documented SOB, O2 applied but no RR done
- Systolic 84, next checked 7 hours later was 65
- BP dropped from 166/60 to 105/58 (33% drop) – documented obs as charted
- Systolic 85, normally 100 -110, next checked 18 hrs later
Pilot

Four Pilot wards

- Modified Early Warning Scores
- Redesigned Observation Chart
- Education
Data Collection

Control period:
4/12 Feb-June 06 (1157 pts)

Intervention period:
4/12 Feb-June 07 (985 pts)

Data: Patient Demographics
- Hospital LOS
- Hospital Outcome
- 25% Random Sample: Collection of Vital Signs
### Results

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Pilot</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients (%)</td>
<td>1157</td>
<td>985</td>
<td></td>
</tr>
<tr>
<td>Unplanned ICU admissions</td>
<td>21(1.9)</td>
<td>5(0.5)</td>
<td>0.005</td>
</tr>
<tr>
<td>Unexpected hospital deaths</td>
<td>11(1.0)</td>
<td>2(0.2)</td>
<td>0.03</td>
</tr>
<tr>
<td>All hospital deaths</td>
<td>30(2.6)</td>
<td>6(0.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Cardiac arrests</td>
<td>4(0.4)</td>
<td>0(0)</td>
<td></td>
</tr>
<tr>
<td>MET Referral</td>
<td>25(2.2)</td>
<td>38(3.9)</td>
<td>0.03</td>
</tr>
</tbody>
</table>
Oxygen Delivery

- All cells require energy to function
- In order to produce energy the cells require oxygen
Aerobic Pathway

- **Aerobic respiration**
  - Turns glucose and oxygen into water and carbon dioxide
  - The energy from this reaction produces ATP (energy for cells)
  - For this to occur the cells require oxygen delivery to the cells
Anaerobic Pathway

- Energy can be produced without oxygen
- This is through anaerobic metabolism
  - This a less efficient form of metabolism
  - It produces waste products such as Lactic Acid
  - Some cells can not produce energy anaerobically so if oxygen delivery is compromised then the cells do not function
- For example: the Brain
Arterial Oxygen Content requires:

- Patent airway
- Functioning lung tissue
- Gas exchange
- Haemoglobin to carry the oxygen

A reduction in oxygen delivery results in an increased respiratory rate:

- To get more oxygen in
- To assist in the removal of waste products (i.e. CO2)
Cardiac Output

Cardiac Output = Stroke Volume (amount pumped with each beat) x Heart Rate

Requires:

- Good volume
- A functioning pump
- And is dependent on peripheral vascular resistance

A reduction in cardiac output results in:

- Increased heart rate
- & may cause a decrease in BP
When the body detects decreased oxygen delivery at the tissues or a reduction in cardiac output the body compensatory mechanisms occur. These include:

- Increases the respiratory rate
- Increases the heart rate

The result of failing/failed compensatory mechanisms is:

- Reduction in oxygen saturations
- A falling BP
By monitoring a complete set of vital signs you can detect signs of reduced oxygen delivery through detection of signs of:

- Compensation (↑HR and ↑RR)
- Decompensation (↓SpO2 and ↓BP)
- Temperature assists in diagnosing the cause
- Changes in level of consciousness indicate poor energy production and as such a reduction in level of consciousness should be accompanied by a check of the patients BGL.
**Oxygen Delivery Chain**

\[
\text{Arterial Oxygen Content} \times \text{Cardiac Output} \times \text{Peripheral Vascular Resistance} = \text{BP}
\]

\[
\{(\text{SaO}_2 \times \text{Hb}) + \{\text{PaO}_2\}\} \times \text{Stroke Volume} \times \text{Heart Rate}
\]

A \hspace{2cm} RR \hspace{2cm} B \hspace{2cm} C

**BLS**

Urine Output

Temp & BGL & LOC

*Note: All the RED are vital signs, hence vital signs are vital*
Decreased oxygen delivery at the tissue level
  ↓
Anaerobic metabolism
  ↓
Lactate production
  ↓
Acidosis
  ↓
Stimulates respiratory drive
  ↓
Increases the Respiratory Rate
Points to Note:

- An increase in Respiratory Rate can occur with a normal SpO₂
- Oxygen flow rates < 6L/min for a face mask should not be used
- Do not remove the Oxygen when taking ABGs
- Don’t rely on machines!
Points to Note:

- Patients die of hypoxia not CO2
- Some patients with Chronic Obstructive Pulmonary Disease (COPD) and are “CO2 retainers” i.e. Do not respond to CO2, but respond to low O2
- In COPD if pCO2 > 60mmHg but hypoxic i.e. pO2 < 60mmHg
- Aim for SpO2 to be 88-92% for COPD

DO NOT TURN OXYGEN DOWN!
Decreased BP can be a result of:
- Decreased intravascular blood volume
- Decreased contractility of the heart
- Decreased Peripheral Vascular Resistance

BP = Cardiac Output x Peripheral Vascular Resistance
- Cardiac output falls from low stroke volume
- Stroke volume falling causes tachycardia
- To maintain BP, peripheral resistance rises

Hypotension, cool hands & no heart failure – IV fluids
Decreased BP can be a result of:
- Decreased intravascular blood volume
- Decreased contractility of the heart
- Decreased Peripheral Vascular Resistance

BP = Cardiac Output x Peripheral Vascular Resistance
- Cardiac output falls from low stroke volume
- Stroke volume falling causes tachycardia
- To maintain BP, peripheral resistance rises

Hypotension, cool hands & signs of heart failure – Cease fluids / ICU/CCU consult
Decreased BP can be a result of:

- Decreased intravascular blood volume
- Decreased contractility of the heart
- Decreased Peripheral Vascular Resistance

BP = Cardiac Output x Peripheral Vascular Resistance

- Vasodilatation causes low BP
- Vasodilatation causes low venous return
- Low venous return causes low stroke volume

Hypotension, warm hands: IV fluids
Seagull Sign

### MEWS Escalation Table

<table>
<thead>
<tr>
<th>MEWS</th>
<th>Notify</th>
<th>Escalate</th>
<th>Observations</th>
<th>Intra-hospital escort</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEWS 4-5</td>
<td>Team Leader</td>
<td>RMG to review within 30 mins</td>
<td>After 60 minutes if no review or no improvement, escalate per MEWS 6-7</td>
<td>Vital signs: RIN/RNM</td>
</tr>
<tr>
<td>MEWS 6-7</td>
<td>Team Leader</td>
<td>Registrar to review within 30 mins</td>
<td>After 60 minutes if no review or no improvement, escalate per MEWS 6-7</td>
<td>RIN/RNM and RMO</td>
</tr>
<tr>
<td>MEWS 8</td>
<td>Team Leader</td>
<td>Contact Registrar to review immediately</td>
<td>If patient improves “decrease frequency of vital signs” to:</td>
<td>RIN/RNM and REG</td>
</tr>
<tr>
<td></td>
<td>Contact Consultant</td>
<td></td>
<td>Hours for 4 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consider MET if still review or no improvement</td>
<td></td>
<td>Hours for 24 hours</td>
<td></td>
</tr>
</tbody>
</table>

### Usual / Target SBP: 120

Circle the column showing the patient's usual systolic BP.

### 4/MET

**MET Criteria**
- Any observation in the 4/MET zone
- Sudden drop in level of consciousness
- Airway threat
- Respiratory or cardiac arrest
- Any patient you are worried about that does not fit the above criteria

**Dial “8” or use Code Blue Button**

#### MEWS Escalation Score

<table>
<thead>
<tr>
<th>Score</th>
<th>Modified Early Warning Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4/MET</td>
<td>4/MET</td>
</tr>
</tbody>
</table>

#### Pain Score

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No pain</td>
</tr>
<tr>
<td>1-3</td>
<td>Mild</td>
</tr>
<tr>
<td>4-6</td>
<td>Moderate</td>
</tr>
<tr>
<td>7-10</td>
<td>Severe</td>
</tr>
</tbody>
</table>

**Tick box if a variance applies**

**Tick box if variation to frequency of observations apply**
Level Of Consciousness:

- BGL is the first thing to be checked in a patient with a decreased level of consciousness
- If there is a sudden fall in consciousness or drop of GCS >2 be concerned
Urine Output

Renal Function:
- Urine output should be greater than 0.5mls/kg/hr
- Small window when oliguric to prevent acute renal failure
- Do not give Frusemide for low UOP unless other causes are ruled out & the patient is clinically fluid overloaded
Hypothermia

- Sepsis
- Hypoadrenalism, hypopituatunism, hypothyroidism
- Aggressive fluid resuscitation
- Exposure to low temperature (Intraoperatively)
- Neurological (stroke, trauma, tumour)
- Skin diseases (burns, dermatitis)
- Drug induced (sedatives)
- Neuromuscular insufficiency
Hypothermia (35°C)

- HR, RR & metabolic rate decreases
- Confusion
- Arrhythmias
- Cardiac arrest
OBSERVATION CHART
Why coloured OBS chart and Response Chart?

- Used in UK extensively
- Simple bedside tool
- Indicates early signs of deterioration
- Structure for communicating
- Assists doctors in triaging
- Inbuilt escalation procedure
- Provides support for inexperienced staff
- Empowers nurses and JMOs
### Inside of Observation Chart

#### MEWS Escalation Table

<table>
<thead>
<tr>
<th>MEWS</th>
<th>Notify</th>
<th>Escalate</th>
<th>Observations</th>
<th>Intra hospital escort</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
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<td>7</td>
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<tr>
<td>8</td>
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</tbody>
</table>

- Vital signs: 15% hourly for 1 hour
- Comprise fluid balance chart
- If patient improves, "decrease frequency of vital signs" for
- Hourly for 4 hours
- 4 hourly for 24 hours

#### MET Criteria

**Dial "8" or use Code Blue Button**
- Any observation in the 4/MET zone
- Sudden drop in level of consciousness
- Airway threat
- Respiratory or cardiac arrest
- Any patient you are worried about that does not fit the above criteria

#### MEWS Criteria

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<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1</td>
<td></td>
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<td>4</td>
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<td></td>
</tr>
</tbody>
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- Vital signs: 15% hourly for 1 hour
- Comprise fluid balance chart
- If patient improves, "decrease frequency of vital signs" for
- Hourly for 4 hours
- 4 hourly for 24 hours

#### MEWS Calculation

- **respiratory rate**: < 12 or > 25
- **blood pressure**: 105-115/65-75
- **oxygen saturation**: > 95%
- **temperature**: < 36.5°C or > 39°C
- **sensation**: Alert and alert

**TOTAL MEWS**

- **Pain Score**
  - 0 = no pain → 10 = worst pain

- **Tick box if a variance applies**
  - Refer to back section for variance

- **Tick box if variation to frequency of observations apply**
### Variance to MEWS in patients with a chronic condition:

Where a patient has a pre-existing chronic condition that may require variance from the normal scoring of MEWS, document the revised accepted range for the adjusted vital sign below. Agreement with the admitting Consultant or Registrar is required. Variance must also include a “valid until” date.

<table>
<thead>
<tr>
<th>Respiratory rate (to)</th>
<th>Reason for Variance to MEWS Criteria:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen Saturation (to)</td>
<td>Consultant/Registrar Signature:</td>
</tr>
<tr>
<td>Heart Rate (to)</td>
<td>Print name:</td>
</tr>
<tr>
<td>Sedation score</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td>Time: hours</td>
</tr>
<tr>
<td></td>
<td>Valid until:</td>
</tr>
</tbody>
</table>

### Variance to MET in patients with a chronic condition:

Where a patient has a pre-existing chronic condition that may require variance from the normal MET criteria, document the revised accepted MET criteria for the adjusted vital sign below. Agreement with the admitting Consultant or Registrar is required. Variance must also include a “valid until” date. (EXAMPLE: accept SO2 down to 60% as long as alert, warm, passing urine and heart rate not greater than 100 bpm)

<table>
<thead>
<tr>
<th>Respiratory rate ≤ OR ≥</th>
<th>Reason for Variance to MET Criteria:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen Saturation ≤ OR ≥</td>
<td>Name (Consultant/Registrar):</td>
</tr>
<tr>
<td>Heart Rate ≤ OR ≥</td>
<td>Signature:</td>
</tr>
<tr>
<td>Blood Pressure ≤ OR ≥</td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td>Time: hours</td>
</tr>
<tr>
<td></td>
<td>Valid until:</td>
</tr>
</tbody>
</table>

### Communication for MEWS ≥ 4

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Action/comments</th>
<th>Print name</th>
<th>Signature</th>
</tr>
</thead>
</table>

---

### Additional Observations

- **Date**
- **Time**
- **Blood Glucose Level (mmol/L)**
- **Weight (kg)**
- **Blood Cells**
- **Oxygen Saturation (%)**
- **pH**
- **Leucocytes**
- **Blood Pressure**
- **Ketones**
- **Bilirubin**
- **Unsaturated**
- **Protein**
- **Glucose**

**General Instructions**

- Vital sign value must be recorded in the correct row as identified by its range.
- Observations must be represented graphically.
- For a vital sign in the extreme of a range i.e. RR ≥ 36, write the number.
- If vital sign falls in coloured area refer to MEWS legend to determine score.
- Add all scores to calculate Total MEWS.
- For MEWS ≥ 4 refer to MRWS Escalation Table.
How does the MEWS Chart work?

- Track and trigger system
- Each observation is plotted on the chart
- Observations in the white zone score “zero”
- Observations in the coloured zones score between 1-4 (depending on the colour)
- Total score of all vital signs is calculated
- Escalation starts with a MEWS of 4
MEWS Escalation

- If vital signs meet hospital criteria for MET or Code Blue than call a MET
- Total MEWS of 4 requires a medical review
- There will be pts who will have a MEWS <4, however, it is in the best interest to receive a medical review. Always use your clinical judgement.
# Modified Early Warning Scores Table

<table>
<thead>
<tr>
<th>Modified Early Warning Score</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory Rate (breaths/minute)</td>
<td>≤4</td>
<td>5-8</td>
<td></td>
<td>9-20</td>
<td>21-24</td>
<td>25-30</td>
<td>31-35</td>
<td>≥36</td>
<td></td>
</tr>
<tr>
<td>Oxygen Saturation (%)</td>
<td>≤84</td>
<td>85-89</td>
<td>90-92</td>
<td>93-94</td>
<td>≥95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature (°C)</td>
<td>≤34.0</td>
<td>34.1-35.0</td>
<td>35.1-36.0</td>
<td>36.1-37.9</td>
<td>38.0-38.5</td>
<td>≥38.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart Rate (beats/minute)</td>
<td>≤39</td>
<td>40-49</td>
<td>50-99</td>
<td>100-109</td>
<td>110-129</td>
<td>130-139</td>
<td>≥140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sedation Score (Level of Consciousness)</td>
<td>Awake</td>
<td>Mild</td>
<td>Moderate</td>
<td>Severe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Determining the Usual Systolic Blood Pressure

The usual systolic blood pressure is essential to evaluate and score the current blood pressure and physiology of the patient.

To determine the patient’s Usual Systolic BP:
- Ask the patient or family member

If the patient or family do not know other options include:
- Refer to clinical records, past or present admissions
- Ask the treating medical officer
Determining the Usual Systolic Blood Pressure

- If in doubt use the ‘default’ Usual Systolic BP of 130mmHg systolic and review by a medical officer within four hours of admission
- There may be times when the usual SBP may change for the patient during the admission (e.g. started on an antihypertensive). If this occurs the time and date of the change and the reason for the change should be documented in the clinical record
- An adjustment to the Usual Systolic BP requires a senior medical review
How to score Blood Pressure with the Usual Systolic BP

<table>
<thead>
<tr>
<th>Blood Pressure (mmHg)</th>
<th>Heart Rate (beats/minute)</th>
<th>usual / target SBP: 130</th>
</tr>
</thead>
<tbody>
<tr>
<td>190-199</td>
<td>100-109</td>
<td>0</td>
</tr>
<tr>
<td>180-189</td>
<td>110-119</td>
<td>1</td>
</tr>
<tr>
<td>170-179</td>
<td>120-129</td>
<td>2</td>
</tr>
<tr>
<td>160-169</td>
<td>130-139</td>
<td></td>
</tr>
<tr>
<td>150-159</td>
<td>140-149</td>
<td></td>
</tr>
<tr>
<td>140-149</td>
<td>150-159</td>
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</tr>
<tr>
<td>130-139</td>
<td>160-169</td>
<td></td>
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<td>120-129</td>
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<td>100-109</td>
<td>190-199</td>
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</tr>
<tr>
<td>90-99</td>
<td>200</td>
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</tr>
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<td>80-89</td>
<td></td>
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<td>70-79</td>
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<td>60-69</td>
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<td>50-59</td>
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<td>40-49</td>
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<tr>
<td>30-39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Score current systolic BP using circled column

4/MET
A variance should only be used for chronic conditions and not acute conditions, as the physiological changes in these cases are indications of failure of oxygen delivery and compensation. To ignore review in these cases would be detrimental to the patient.
Variance to MEWS

- Revised accepted range for adjusted vital sign
- Only to be used for a pre-existing chronic condition. For example patients with COPD, oxygen saturations of > 88% = MEWS 0. When oxygen saturations < 88% trigger response of MEWS 3 or if ≤ 84% MEWS 4/MET
- Admitting Consultant or Registrar are required to agree and include a valid date
Variance to MET

- Revised accepted MET criteria
- Only to be used for pre-existing chronic condition. For example, accepted SBP down to 80 mmHg as long as the patient is alert, warm, passing urine and has a HR < 100 beats/minute
- Admitting Consultant or Registrar are required to agree and include a valid date
Remember to connect the dots
Documentation of Respiratory Rate

<table>
<thead>
<tr>
<th>ADULT</th>
<th>DATE</th>
<th>TIME</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17/1</td>
<td>23</td>
<td>18/1</td>
</tr>
<tr>
<td>Respiratory Rate (breaths/minute)</td>
<td>Write ≥36</td>
<td>31-35</td>
<td>31-35</td>
</tr>
<tr>
<td></td>
<td>25-30</td>
<td>25-30</td>
<td>25-30</td>
</tr>
<tr>
<td></td>
<td>21-24</td>
<td>21-24</td>
<td>21-24</td>
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<tr>
<td></td>
<td>15-20</td>
<td>15-20</td>
<td>15-20</td>
</tr>
<tr>
<td></td>
<td>9-14</td>
<td>9-14</td>
<td>9-14</td>
</tr>
<tr>
<td></td>
<td>5-8</td>
<td>5-8</td>
<td>5-8</td>
</tr>
<tr>
<td></td>
<td>Write ≤4</td>
<td>Write ≤4</td>
<td>Write ≤4</td>
</tr>
</tbody>
</table>

Respiratory Rate MEWS: 3 0 0 0 0 3 3
## Documentation of Oxygen Saturation

<table>
<thead>
<tr>
<th>Oxygen Delivery</th>
<th>Flow Rate (L/min)</th>
<th>Oxygen Saturation (%)</th>
<th>Flow Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA Room air</td>
<td>2L 3L 3L 3L 3L</td>
<td>98-100</td>
<td>98-100</td>
</tr>
<tr>
<td>HM Hudson Mask</td>
<td>NPNPNPNPNPNPNPNPN</td>
<td>95-97</td>
<td>95-97</td>
</tr>
<tr>
<td>NRB non rebreather mask</td>
<td>NP</td>
<td>93-94</td>
<td>93-94</td>
</tr>
<tr>
<td>NP Nasal Prongs</td>
<td>NP</td>
<td>90-92</td>
<td>90-92</td>
</tr>
<tr>
<td>HFNP high flow nasal prongs</td>
<td>NP</td>
<td>87-89</td>
<td>87-89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>85-86</td>
<td>85-86</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Write ≤84</td>
<td>Write ≤84</td>
</tr>
</tbody>
</table>

An increase in oxygen delivery requirement **MUST** be referred to a medical officer for urgent patient review.
Documentation of Heart Rate and Blood Pressure

Blood Pressure (mmHg)
- 190-199
- 180-189
- 170-179
- 160-169
- 150-159
- 140-149
- 130-139
- 120-129
- 110-119
- 100-109
- 90-99
- 80-89
- 70-79
- 60-69
- 50-59
- 40-49
- 30-39
- Write ≤20

Heart Rate (beats/minute)
- 90-99
- 80-89
- 70-79
- 60-69
- 50-59
- 40-49
- 30-39
- Write ≤29

Heart Rate MEWS: 0 0 0 0 0 0 2
Blood Pressure MEWS: 2 2 2 2 1 2 4

Usual/Target SBP: 120

Score current SYSTOLIC BP using circled column

Circle the column showing the patient’s usual systolic BP

Score current SYSTOLIC BP using circled column

4/MET
### Documentation of Temperature

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Temperature MEWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write ≥39.6</td>
<td></td>
</tr>
<tr>
<td>38.6 – 39.5</td>
<td></td>
</tr>
<tr>
<td>38.0 – 38.5</td>
<td></td>
</tr>
<tr>
<td>37.6 – 37.9</td>
<td></td>
</tr>
<tr>
<td>37.0 – 37.5</td>
<td></td>
</tr>
<tr>
<td>36.1 – 36.9</td>
<td></td>
</tr>
<tr>
<td>35.1 – 36.0</td>
<td></td>
</tr>
<tr>
<td>34.1 – 35.0</td>
<td></td>
</tr>
<tr>
<td>Write ≤34.0</td>
<td></td>
</tr>
</tbody>
</table>

The chart shows a line graph of temperature values ranging from 34.0°C to 39.6°C, with corresponding MEWS scores indicated for each temperature range.
# Documentation of Sedation Score

## Level of Consciousness

<table>
<thead>
<tr>
<th>Sedation Score</th>
<th>Sedation MEWS</th>
<th>Awake</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awake</td>
<td></td>
<td>Awake</td>
<td>Mild</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
<tr>
<td>Mild</td>
<td>2</td>
<td>Mild</td>
<td></td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>2</td>
<td>Moderate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>2</td>
<td>Severe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awake</td>
<td>Awake and alert</td>
</tr>
<tr>
<td>Mild</td>
<td>Easy to rouse</td>
</tr>
<tr>
<td>Moderate</td>
<td>Constantly drowsy, easy to rouse but unable to stay awake (example: falls asleep during conversation)</td>
</tr>
<tr>
<td>Severe</td>
<td>Somnolent, difficult to rouse</td>
</tr>
</tbody>
</table>
# MEWS Escalation

<table>
<thead>
<tr>
<th>MEWS</th>
<th>Notify</th>
<th>Escalate</th>
<th>Observations</th>
<th>Intra hospital escort</th>
</tr>
</thead>
</table>
| MEWS 4 - 5 | • Team Leader  
• RMO to review within 30 mins | After 60 minutes  
If nil review or nil improvement escalate per MEWS 6 - 7 | Vital signs:  
½ hourly for 1 hour  
Commence fluid balance chart | RN/RM |
| MEWS 6 - 7 | • Team Leader  
• Registrar to review within 30 mins | After 60 minutes  
If nil review or nil improvement escalate per MEWS ≥ 8 | If patient improves, “decrease frequency of vital signs” to:  
Hourly for 4 hours  
4 hourly for 24 hours | RN/RM and RMO |
| MEWS ≥ 8 | • Team Leader  
• Contact Registrar to review immediately  
• Contact Consultant | Consider MET if nil review or nil improvement |                                                                            | RN/RM and REG |
Practice with MEWS Chart

- RR 22, SaO2 96% R/A, HR 65, BP 130/60 (usual systolic 140), T 37, pt is alert
- RR 30, SaO2 92% R/A, HR 86, BP 110/60 (usual systolic 140), T 38, pt is alert
- RR 32, SaO2 92% R/A, HR 112, BP 130/60 (usual systolic 140), T 38, pt is alert
Practice with MEWS Chart

- RR 22, SaO2 96% R/A, HR 65, BP 130/60 (usual systolic 140), T 37, pt is alert  **TOTAL MEWS = 1**
- RR 30, SaO2 92% R/A, HR 86, BP 110/60 (usual systolic 140), T 38, pt is alert  **TOTAL MEWS = 6**
- RR 32, SaO2 92% R/A, HR 112, BP 130/60 (usual systolic 140), T 38, pt is alert  **TOTAL MEWS = 8**
A full set of vital signs should be documented on all patients at the following times:

- On admission and at time of initial assessment
- Postoperatively as per procedure
- Post procedure as ordered
Frequency of vital signs

- Minimum of 4/24 for 48 hours transferred from a critical care area (e.g. ICU/ED/CCU) or following an inter-hospital transfer
- Minimum of 8/24 (once per shift) on all patients unless otherwise specified
- In addition as prescribed by a medical officer
- If the patient’s condition deteriorates
Frequency of vital signs

- Family member or carer concern
- As per other standard operating procedures (e.g. Blood transfusion, Patient Controlled Analgesia (PCA) Management, Epidural infusions and IV Opioid Infusions)
- Prior to administration of medications that will directly affect the vital signs (e.g. cardiac medications)
Frequency of vital signs

- Following administration of an opioid other than listed above
- If a single parameter is rechecked to assess the effect of an intervention (i.e. oxygen saturation if oxygen has been applied) a full set of vital signs should be done within 30 minutes
- Visual observations of each patient should occur hourly at a minimum
Changes to vital sign frequency

- Any decrease in frequency of vital sign measurement must only be on the direction of the team leader or a medical officer and must be documented in the clinical record.
- Any staff member can increase the frequency of vital sign measurement.
- In some clinical circumstances more frequent or less frequent observations will be appropriate and this should be documented in the monitoring plan.
Communication & Management Plans
Management Plans

- Each member of the team will have strengths and weakness
- The aim is to work together to ensure the best care is delivered to the patient
Management Plans

- Gather information from the team
- Integrate this into the patients presentation – what is actually happening to the patient?
- Communicate your concerns
- Address each team members concerns
- Formulate, document, and communicate the management plan
- Put it into action
- Reassess
Management Plans: Gather Information

- Verbal
- Progress notes
- Observation charts
- Fluid charts
- Medication charts
- Compare current to previous
Integrate the information

- Understand why the change has occurred
- Think back to the Oxygen Delivery Chain
- Refer to the individual section in the manual
Adequate Response to Concerns

- Each team member has different priorities
- Reflect if things could have been done better?
- Have your concerns been addressed adequately?
- Has other team members concerns been addressed?

Ask for HELP!
Management plans

- Frequency of Observation orders
- Nursing orders
- Allied Health orders
- Change in therapy orders
- Investigations/Interventions
- Notification orders
Actioning the plan

- Ensure everyone knows their role & responsibilities
- Ensure the plan has made a difference to the patient
- Don’t “pass the buck”

You are accountable!
Reassess

- Always follow up to see if the patient is improving
- Applies to everyone EN, RN, TL, Intern, RMO, Registrar, Consultant

If they are not improving, start again!
Documenting using ISOAP tool

- **I: Intervention/Introduction**
  Identify yourself and give your reason for the clinical handover or interventions planned

- **S : subjective information**
  Presentation of the consumer’s viewpoint – their story, how they may feel

- **O: objective information**
  Objective observations of the consumer – factual, unbiased and measurable

- **A: analysis/action/advice**
  Analysis and interpretation of subjective and objective information followed by action implemented and any related advice or education provided

- **P: plan**
  Plan of care to incorporate any required changes to interventions and time frames – includes changes to care plans
Documenting

- Helps the flow of information, shift to shift & day to day
- Medico legal requirement
- Concrete plan, no assumptions
- Remember if you didn’t write it you didn’t do it!
- 5 years from now is it enough for you to justify your actions
Recognition of the Deteriorating Patient

THE PROCESS:

1. Recognise there is a problem
2. Communicate to the team members
3. Convey concerns to the next shift with outstanding issues to ensure follow-up occurs
4. Timely & appropriate management
5. Timely & appropriate review
6. Communicate
7. Interpreted by doctor
8. Interpreted by nurse
9. Vital signs performed

Communicate to the team members
ISBAR Communication Tool

- **Identify** – Self, Dr, patient, ward
- **Situation** – Why are you calling? Briefly state problem
- **Background** – What is the relevant background – history, recent procedure, medications
- **Assessment** – What do you think the problem is?
- **Recommendation** – What would you like the doctor to do?
When communicating:

- Who is the most appropriate person to inform about deterioration?
- Communicate as much relevant information as possible
- Document the communication and what actions have been taken
COMMUNICATION EXERCISE
Take home messages

- Vital signs are vital
- Understand why they have changed – Oxygen Delivery Chain
- Teamwork
- Management Plans
- Communicate using ISBAR tool
- Ask for help
- Document using ISOAP tool
- You can make a difference to patient outcomes!
COFFEE BREAK
CASE STUDIES