



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive



ACUTE
MEDICINE

COMPASS Programme Overview

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Background

Research findings (NCEPOD 2005, McQuillan et al 1998)

- Physiological decline heralding clinical deterioration common
- Respiratory rate infrequently recorded
- Many patients receive delayed or inappropriate treatment
- Multi-disciplinary deficiencies in management of Airway, Breathing & Circulation problems
- Suboptimal care contributed to morbidity & mortality

Recommendations (NCEPOD 2005, NICE clinical guideline 50)

- Physiological observations should be recorded and acted upon by staff who have been trained....and understand clinical relevance
- Physiological track and trigger systems should be used
- Training must be provided...in the recognition of critical illness & immediate management of fluid & oxygen therapy



compass

"Pointing you in the right direction"

- Developed in Australia 2006
- Educational component of multi-faceted approach:
 - Colour coded observation chart
 - MEWS
 - Education package
- Multidisciplinary programme
- Aims: Enhance understanding of patient deterioration & significance of altered physiological observations
- Currently delivered in Australia & Oman

Research

Mitchell, I.A., McKay, H., Van Leuvan, C., Berry, R., McCutcheon, C., Avard, B., Slater, N., Neeman, T. and Lamberth, P. (2010) A prospective controlled trial of the effect of a multi-faceted intervention on early recognition and intervention in deteriorating hospital patients. *Resuscitation* **81**: pp. 658–666.

- Pre & post implementation pilot study to evaluate the effect of COMPASS & MEWS
- Reduction in:
 - unplanned admissions to ICU 1.8% vs. 0.5%
 - unexpected deaths 1.9% vs. 0.8%
- Sub-group analysis: Frequency of documentation of all vital signs significantly increased (3.4 vs. 4.5) including respiratory rate (2.3 vs. 4.7)

Education Package (TTT & Provider)

- Pre-course preparation-CD, Manual & Quiz

Content:

- Oxygen delivery
- Airway
- Breathing
- Circulation
- Disordered level of consciousness
- Diminished urine output
- MEWS
- Communication, teamwork & management plans (ISBAR)

Education Package

- Core material review-**A**irway, **B**reathing, **C**irculation, **D**isordered level of consciousness, **O**liguria
- MEWS practice session
- Communication-**I**SBAR practice session
- Case scenarios & role playing x 4

Airway & Breathing

Decreased oxygen delivery at the tissue level



Anaerobic metabolism



Lactate production



Acidosis



Stimulates respiratory drive



Increases the **Respiratory rate**

Circulation

Decreased BP can be a result of:

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

$BP = \text{Cardiac Output} \times \text{Peripheral Vascular Resistance}$

- 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

The Patient with a Disordered Conscious Level

Airway, Breathing, Circulation

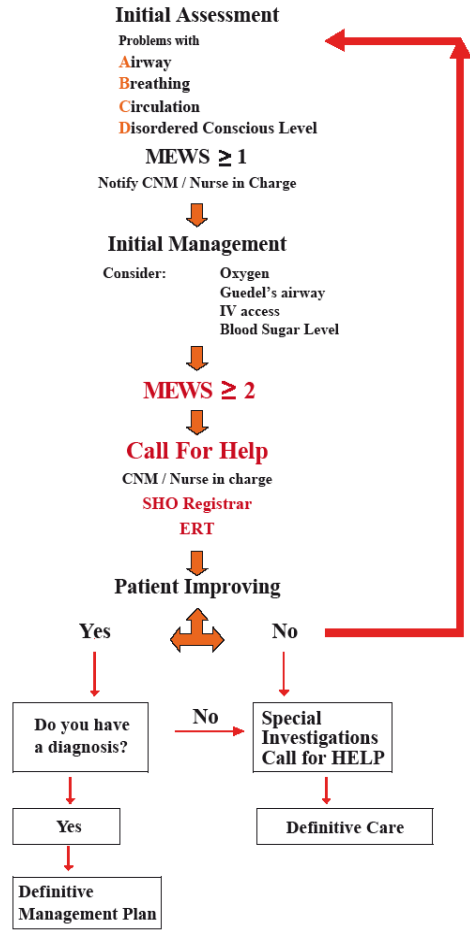
Don't forget the Glucose

- AVPU
- Pupils
- Blood Glucose



Recovery
position

Deteriorating Patient Management Flow Chart



<p style="text-align: center;">I Identify</p>	<p style="text-align: center;">Identify: You, Doctor, Patient Is this Dr. _____? This is _____ <i>(e.g. Mary, I am the team leader on 7A)</i> I am calling about _____ <i>(e.g. Mr David Jones)</i></p>
<p style="text-align: center;">S Situation</p>	<p style="text-align: center;">Situation: Why are you calling? I am calling because _____ <i>(e.g. MEWS of 4)</i> Resp Rate _____ Sats _____ O2 delivery _____ Temp _____ Heart rate _____ BP _____ UOP _____ LOC _____ <i>(only use abnormal readings initially)</i></p>
<p style="text-align: center;">B Background</p>	<p style="text-align: center;">Background: What is relevant background? They are _____ years old Admitted for _____ Recent surgery or procedures _____ Relevant past medical/surgical history _____ They currently have _____ <i>(e.g. IV fluids, IDC, PCA)</i></p>
<p style="text-align: center;">A Assessment</p>	<p style="text-align: center;">Assessment: What do you think is the problem? I think _____ <i>(e.g. they are hypovolaemic)</i> <i>(you can skip this if you don't know what's wrong)</i></p>
<p style="text-align: center;">R Recommendation</p>	<p style="text-align: center;">Recommendation: What do you want them to do? I would like you to _____ <i>(e.g. come and review him please)</i> Is there anything you would like me to do before you get here?</p>

COMPASS & Ireland

- Commenced 26/05/11
 - 3 Train the Trainer Programmes delivered
 - 49 trained-nursing & medical staff
 - Provider training commenced locally

Course Evaluation

CD & Quiz

- This method of education is flexible for clinicians-agree/strongly agree 78%
- The paper quiz was beneficial-agree/strongly agree 85%

Modified Early Warning Scores

- The session was presented in a clear logical manner-agree/strongly agree 100%
- The content was clear and appropriate-agree/strongly agree 93%

Course Evaluation

Communication/Management Plans

- The information was presented clearly-agree/strongly agree 96%
- The information will make a difference in my every day work-agree/strongly agree 85%

Scenarios

- The session was useful to my professional development-agree/strongly agree 78%
- I will approach my work differently after this session-agree/strongly agree 63%

Track & Trigger Systems

- Based on the periodic observation of selected basic physiological signs (track) with predetermined calling or response criteria (trigger)
- MEWS-aggregate weighted track & trigger system
- Designed to identify patients at risk of deterioration early & initiate appropriate intervention
- Does not replace clinical concern

MEWS Key

Modified Early Warning Score (MEWS) KEY							
Resuscitation Status should be established by the Primary Medical Team							
Score	3	2	1	0	1	2	3
Resp. Rate	≤8			9 - 19	20 - 30	31 - 35	≥36
SpO ₂	≤84%	85 - 89%	90 - 92%	≥93%			
* Inspired O ₂ (F _i O ₂)				On Air			Supplemental O ₂ Therapy >35%
Temp (°C)	≤34.0	<34.1 - 35.0	35.1 - 35.9	36 - 37.9	38 - 38.5	≥38.6	
Systolic BP (mm Hg)				See Table 1			
Pulse (BPM)	≤40		41-50	51 - 99	100 - 110	111 - 129	≥130
AVPU / CNS Response			New Agitation/ Confusion	Alert	Voice		Pain/Unresponsive
**Urinary Output (over 4 hours)	<80mls	80-119mls		120-800mls	>800mls		

* Inspired O₂ (F_iO₂) % can be adjusted for post-op patients as per hospital policy - document below.

MEWS Practice Session

- Mr Jones is 75 years old admitted to medical ward 12 hours ago with pneumonia
- Past medical history: IHD, Atrial fibrillation, Diabetes Mellitus, Right total hip replacement 3 weeks ago
- MEWS score 1 on admission
- 6 am vital signs: Pulse 106, BP 124/70 mmHg, Respiratory rate 22, O₂ saturations 94%
Temperature 37.2 c. Patient alert. Usual BP 150 mmHg systolic
- Calculate the MEWS

Parameter	Score		
Respirations	1		
Oxygen Therapy	0		
SpO ₂	0		
Pulse rate	1		
Blood pressure	1		
Temperature	0		
Urine rate	0		
CNS Response	0		
Total MEWS	3		

- What would you do next?

Reviewed by SHO:

- Regular medications given including Digoxin 0.25mgs & Cardicor 2.5 mgs PO
- Advised monitor patient, obtain 12 lead ECG & record vital signs every 60 minutes

- Vital signs recorded @ 07.30:
Pulse 126, BP 104/68 mmHg,
Respiratory rate 24, Temperature 37.2 c
O₂ saturations 92%, Patient alert
- Calculate the MEWS

Parameter			
Respirations	1	1	
Oxygen Therapy	0	0	
SpO2	0	1	
Pulse rate	1	2	
Blood pressure	1	2	
Temperature	0	0	
Urine rate	0	0	
CNS Response	0	0	
Total MEWS	3	6	

- What would you do next?

Thank You