Australian Commission on Safety and Quality in Health Care Seminar

Solutions for Recognising Clinical Deterioration

10 November 2009
AIM –

Acutely Deteriorating Patient

• Multidisciplinary familiarity with the principles of

  “When to Worry”

• To acquire some
  1. simple assessment,
  2. communication skills and
  3. Interventions
**DETECT**

DETECT DETERIORATION

EVALUATE YOUR PATIENT

TREAT

SCALE

COMMUNICATE WITH YOUR TEAM*

*Refer to your local Rapid Response System protocol*
Based on

- common algorithms and
- SOCCER Research on the deteriorating patient
- with thanks to BASIC (Hong Kong)
Signs of critical conditions and emergency responses (SOCCEER): A model for predicting adverse events in the inpatient setting

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Simple messages and algorithms

- Aim to get *all staff* (not just RRS) engaged so using SOCCER work and theme of “When to Worry”
Program Components
Structure of Package

- Pre Test
- Slide Package for talks for roll out
- Manual => printed & eventually digital
- Post Test
- Database of Case Scenarios for teaching and revision
- “Train the Trainer” manual
  - Train the Trainer support required at state/area
  - Medical and Nursing “educationalist” input
Sponsored By C.E.C.

- Manual
- Set of slides
- MCQ database
- Train the Trainer programme, with manual
Subject: “I Can’t Breathe”
Speaker: Freddy Calm
Date: 4 December 2009

Set of ~20 Power Point “Content” Slides
19 evaluation sheets completed:

10 Medical participant
9 Nursing participant
Disagree → Agree → Strongly Agree

1. I had a clear idea of what was expected of me in the DETECT course.

2. The content of the course was relevant.

3. I will feel more competent identifying deteriorating patients.

4. I will feel more confident assessing deteriorating ward patients.

5. I am clear in when to seek assistance for deteriorating patients.

6. I will be able to clearly ask for help with the deteriorating patient.
Participant’s Comments

• "A wonderful course, hands on good participation"

• "I think every nurse from most junior to most experienced should attend this course"

• "This was an excellent course. Thank you. Well organised, very good. Would be helpful to run for the interns/residents/med reg’s etc...."
"Simulation sessions++ were excellent as they tested and consolidated what was learnt"

"Scenarios ++were very practical in regards to communication"

“Excellent…recognise early warning signs for deterioration++, early detection saves lives, assessment of patients A-G algorithm++, early and late warning signs of when to worry++, always give O2 even if they are CO2 retainers, importance of oxygen++, framework for assessing deteriorating patient, earlier detection of problem leads to better outcome"
Some “Educationalist” strategies

1. **Relevance** to daily work => importance of first “chapter”

2. **Progress** each “chapter” simple to complex, example to principle

3. **Diverse** Course materials
When to worry! **Early Warning Signs**

- Partial Airway Obstruction (excluding snoring!)
- SpO2 90-95%
- Respiratory Rate 5-9 bpm or 30-40 bpm
- Pulse Rate 40-50 or 120-140
- Systolic BP 80-100 mmHg or 180-240 mmHg
- Poor peripheral circulation
- Urine output <200mls over 8 hours
- Greater than expected drainage fluid loss
- A drop in GCS of 2 points or GCS <12 or any seizure
- New or uncontrolled pain (including chest pain)
- ABG’s PaO2 50-60, PCO2 50-60, pH 7.2-7.3, BE -5 to -8 mmol/L
- BSL 1-3 mmol/L – **SOCRER Study**

**We know these patients are at risk of Cardiac Arrest or Death or may require ICU transfer**
When to worry! **Late Warning Signs**

- Airway obstruction or stridor
- SpO2 < 90%
- Respiratory Rate < 5 bpm or > 40 bpm
- Pulse Rate < 40 or > 140
- Systolic BP < 80 or > 240 mmHg
- Excess blood loss not controlled by ward staff
- Unresponsive to verbal command or GCS < 8
- Urine output < 200 mls in 24 hours or anuria
- ABG’s PaO2 < 50, PCO2 > 60, pH < 7.2, BE < -7
- BSL < 1 mmol/L

We know these patients are at risk of Cardiac Arrest or Death or may require transfer to ICU
<table>
<thead>
<tr>
<th>SOCCER 1 Early Signs Prevalence</th>
<th>% Adm with Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>SpO$_2$ 90-95%</td>
<td>53.0</td>
</tr>
<tr>
<td>Systolic Pressure 80-100mmHg</td>
<td>27.3</td>
</tr>
<tr>
<td>Pulse &lt;50 or &gt; 120</td>
<td>8.0</td>
</tr>
<tr>
<td>C/O Chest Pain</td>
<td>5.2</td>
</tr>
<tr>
<td>Other</td>
<td>5.0</td>
</tr>
<tr>
<td>Noted decreased urine output</td>
<td>4.0</td>
</tr>
<tr>
<td>SBP &gt;180</td>
<td>3.3</td>
</tr>
<tr>
<td>BSL&gt;15</td>
<td>2.6</td>
</tr>
<tr>
<td>Alteration in mentation</td>
<td>1.7</td>
</tr>
<tr>
<td>GCS &lt; 12 or alteration in GCS &gt; 2</td>
<td>1.6</td>
</tr>
<tr>
<td>Urine Output &lt; 200mls/8hrs</td>
<td>1.2</td>
</tr>
<tr>
<td>Pa O$_2$ 50-60mmHg</td>
<td>0.7</td>
</tr>
<tr>
<td>New bleeding any site</td>
<td>0.7</td>
</tr>
<tr>
<td>BSL &lt;3</td>
<td>0.7</td>
</tr>
<tr>
<td>Poor peripheral circulation</td>
<td>0.5</td>
</tr>
<tr>
<td>Partial airway obstruction (exclude snoring)</td>
<td>0.5</td>
</tr>
<tr>
<td>PaCO$_2$ &gt; 50nnHg</td>
<td>0.5</td>
</tr>
<tr>
<td>New Pain</td>
<td>0.5</td>
</tr>
<tr>
<td>Respiratory Rate &lt;10 or &gt;30</td>
<td>0.3</td>
</tr>
<tr>
<td>Uncontrolled Pain</td>
<td>0.3</td>
</tr>
<tr>
<td>&gt; Expected Drain Fluid Loss</td>
<td>0.3</td>
</tr>
<tr>
<td>Base deficit -5 to -8mmol</td>
<td>0.2</td>
</tr>
<tr>
<td>Any seizure</td>
<td>0.2</td>
</tr>
<tr>
<td>&gt; Expected Blood loss</td>
<td>0.2</td>
</tr>
<tr>
<td>SOCCER 1 Late Signs Prevalence</td>
<td>% Adm with Sign</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>SpO₂ &lt;90%</td>
<td>16.9</td>
</tr>
<tr>
<td>Pulse Rate &lt; 40 or &gt; 140</td>
<td>3.0</td>
</tr>
<tr>
<td>Systolic Pressure &lt;80</td>
<td>2.4</td>
</tr>
<tr>
<td>Unresponsive to verbal commands</td>
<td>1.4</td>
</tr>
<tr>
<td>Failure to reverse variable &lt; 1 hr</td>
<td>0.9</td>
</tr>
<tr>
<td>GCS &lt; or =8</td>
<td>0.7</td>
</tr>
<tr>
<td>PaO₂ &lt;50</td>
<td>0.5</td>
</tr>
<tr>
<td>Urine Output &lt; 200 ml/24hr</td>
<td>0.3</td>
</tr>
<tr>
<td>BSL&gt;25</td>
<td>0.3</td>
</tr>
<tr>
<td>PaCO₂ &gt; 60</td>
<td>0.2</td>
</tr>
<tr>
<td>Base deficit &lt; -8mmol or less</td>
<td>0.2</td>
</tr>
<tr>
<td>Anuric</td>
<td>0.2</td>
</tr>
</tbody>
</table>
...Simple algorithms emphasised
ABCDEF...Look, Listen, Feel... O₂

- Position patient
- i/v and fluids and
- *never* leave a deteriorating patient without a review and management plan
“I lost track of my subject. The gondolier got tired.”
Look  

Listen  

Feel  

A  • Airway  

B  • Breathing  

C  • Circulation  

D  • Disability  
  (neurological assessment)  

E  • Exposure  

F  • Fluids  

G  • Glucose  

GIVE OXYGEN  

POSITION YOUR PATIENT  

Call for help if you can't manage  

Establish IV if not present +/- fluids  

Never leave a deteriorating patient without a priority management and review plan
<table>
<thead>
<tr>
<th>LOOK</th>
<th>LISTEN</th>
<th>FEEL</th>
<th>SPECIAL/TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AIRWAY</strong></td>
<td>Accessory Muscles</td>
<td>Speech, extra sounds wheeze</td>
<td>Tracheal Tug</td>
</tr>
<tr>
<td><strong>BREATHING</strong></td>
<td>Conscious Chest movements Count respiratory rate (1 min)</td>
<td>Bilateral air entry</td>
<td>Bilateral movement Tracheal position</td>
</tr>
<tr>
<td><strong>CIRCULATION</strong></td>
<td>Skin colour-pale, cyanosis JVP</td>
<td>Confusion</td>
<td>Warm hands, warm feet Pulse rate (15secs x 4) and rhythm</td>
</tr>
<tr>
<td><strong>DISABILITY</strong></td>
<td>Pupils (size and function) facial symmetry, limb movements</td>
<td>Slurred speech</td>
<td>Plantar reflexes</td>
</tr>
<tr>
<td><strong>EXPOSURE</strong></td>
<td>Bleeding Rash Contusion Wounds</td>
<td></td>
<td>Look under patient Check drains bags and bottles, aspirates</td>
</tr>
<tr>
<td><strong>FLUIDS</strong></td>
<td>Check fluid chart Check all drain/tube losses</td>
<td>Skin Turgor</td>
<td>CVP Establish IV if not present (+ or – fluids)</td>
</tr>
<tr>
<td><strong>GLUCOSE</strong></td>
<td>Confusion Sweaty LOC</td>
<td>Sweaty</td>
<td>BSL – give glucose if below 3mmols/L or 3-5 mmols/L with decreased conscious state</td>
</tr>
</tbody>
</table>
A “SITUATION AND RESPONSE” FRAMEWORK FOR EACH CASE

• Knowledge base of “When to Worry” → logical approach for each situation. A useful framework:
  • 1) **Recognise** you have a problem using the ABCDEFG, give O2, position your patient and “call for help” Algorithm
  • 2) Plan and give priority to your **Task Management**
  • 3) **Use Team Work** and
  • 4) **Situation Awareness** – logical, systematic approach to each situation
  • 5) Be confident in **Decision Making** and be prepared to Re-evaluate.

• This has been derived from air safety training methodology and non-procedural safety training for anaesthetists
Communication Skills
**ISBAR**

**Introduction**
Identify yourself, your role and location.

**Situation**
State the patient’s diagnosis or reason for admission and current problem.

**Background**
What is the clinical background or context?

**Assessment**
What are your patient’s clinical observations? What do you think the problem is? Don’t forget to have the current vital signs at the ready!

**Recommend**
What do you recommend or what do you want the person you have called to do? Be clear about what you are requesting and the timeframe. Repeat to confirm what you have heard.

Other goals from Education Strategy

- Improved communication skills
- Improved team work
- Improved documentation
Current Roll Out
“Pyramid Education”

• Based on BASIC Programme for critical care from Hong Kong

• Each course trains additional trainers – “Train the trainer”
Current Roll Out

- ST George
- Blacktown
- Grafton
- RPAH
- Dubbo
- Orange
- G.S.A.H.S.
Progress to date

- Piloted on over 300 ward nurses and junior medical staff
- Allied health (physiotherapists)
- All courses evaluated
- “ Rolled out” to Grafton and Blacktown with plans for RPA, Orange, Dubbo underway
Target Audience

- Junior Medical Staff
- Ward bedside nurses
- Allied Health
- Extend to undergraduate teaching
- Specialised audiences eg prison nurses
Walk before We Run

• Core package first=> middle or ward level of pyramid
• Undergraduate/postgraduate streams later
• Colleges/CCRISP/BASIC for top level
• Refreshers
• Ongoing Web learning
Course Requirements
ANY OLD DUMMY WILL DO!
There are always closet thesbiants among the staff!
Future Plans
• Aim for course & modular versions

• Aim for accreditation /MOPS points for cmo’s et al through IMET
• Labour intensive
• Equipment but do not need high end simulation
• Designed as one size fits all so needs specialty modules
• Should not be replaced by e-learning but **blended** learning approach
• Start with e-learning, progress to one day and revise with e-learning
• Needs central co-ordinated support esp for smaller sites and update of web site/materials
Education Package parallel/complimentary to other “pillars” of Between the Flags & “RRS toolkit” and vice versa
• "A wonderful course, hands on good participation"

• "I think every nurse from most junior to most experienced should attend this course"

• "This was an excellent course. Thank you. Well organised, very good. Would be helpful to run for the interns/residents/med reg’s etc...."