Recognising the deteriorating patient
NEWS 2

Wendy Nimmo
Associate Improvement Advisor – Acute Care Portfolio
Healthcare Improvement Scotland

Improvement Hub
Enabling health and social care improvement
NEWS - NEWS 2

• Recording of physiological parameters has now been aligned with the Resuscitation Council (UK) ABCDE approach

• The revised chart has two separate sections for oxygen saturations

• AVPU term has been amended to ACVPU, where C represents new confusion or delirium i.e. (altered mentation)
Oxygen saturations

For NEWS 2 there are two scales available

Scale 1: use this scale for patients with normal respiratory function

OR

Scale 2: use this scale for patients with hypercapnic respiratory failure (usually COPD) who have clinically recommended saturations of 88-92%

The decision to use Scale 2 should be made by a competent decision maker and recorded in the patients notes
Level of consciousness

NEWS 2 uses ACVPU scale

A=alert  
C=new confusion, delirium i.e. altered mentation  
V=responds to voice  
P=responds to pain and  
U=unresponsive

c,v,p and u scores a 3 on the NEWS 2 chart
### The National Early Warning Score (NEWS)

<table>
<thead>
<tr>
<th>Physiological parameters</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+B - Respiratory Rate</td>
<td>≤8</td>
<td>9-11</td>
<td>12-20</td>
<td></td>
<td>21-24</td>
<td>≥25</td>
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</tbody>
</table>

Complete Scale 1 OR Scale 2 for oxygen saturation based on target saturations (ONLY use scale 2 under direction of qualified clinician)

#### A+B - Scale 1 Oxygen Saturations
- ≤91
- 92-93
- 94-95
- ≥96

#### A+B - Scale 2 (If target range is 88-92% e.g COPD)
- ≤83
- 84-85
- 86-87
- 88-92 (on Air)
- ≥93 (on O2)
- 93-94 (on O2)
- 95-96 (on O2)
- ≥97 (on O2)

<table>
<thead>
<tr>
<th>Any supplemental oxygen</th>
<th>Yes</th>
<th>No</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>C - Systolic Blood Pressure</th>
<th>≤90</th>
<th>91-100</th>
<th>101-110</th>
<th>111-219</th>
<th></th>
<th>≥220</th>
</tr>
</thead>
<tbody>
<tr>
<td>C - Heart Rate</td>
<td>≤40</td>
<td>41-50</td>
<td>51-90</td>
<td>91-110</td>
<td>111-130</td>
<td>≥131</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D - Level of consciousness (score C for NEW confusion)</th>
<th>A</th>
<th>C,V,P or U</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>E - Temperature</th>
<th>≤35.0</th>
<th>35.1-36.0</th>
<th>36.1-38.0</th>
<th>38.1-39.0</th>
<th>≥39.1</th>
</tr>
</thead>
</table>
Improvement Hub

Enabling health and social care improvement

Implementation of NEWS 2 across NHS Highland

Maryanne Gillies
Senior Quality Improvement Lead
SPSP Acute Adult recommendation

1. NEWS continues to be the recommended method of recognising, escalating and communication for deteriorating patients including those with sepsis

2. Boards move to separate scales for oxygen saturation as per RCP recommendations

3. The inclusion of new confusion “C” in the ACVPU scale

4. The RCP report recommends that NEWS should become part of mandatory training for all clinical staff
Old NEWS version: Back Page
The biggest room in the world, is the room for improvement.

Author Unknown
Evidence

HSMR

Case note reviews

News Data
Point prevalence 100 charts

<10% have a 4AT completed
5% had Waterlow or SSI completed
• Recent set of observations

• NEWS of 8, followed by News of 6
05/05/2018

15:40 Develops NEWS 8

News repeated, but **time is missing**
Repeated NEWS score 6

20:00 NEWS repeated, News **score 5**

News not carried out again until **05:40 6/5/18 (9hrs 40 mins)**
Premise that early detection + timeliness + communication + escalation

= correct clinical response + Improve outcomes for people in our care

Potential of life threatening harm through System Failure...
Improvement methodology

Model for improvement:
- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What changes can we make that will result in the improvements that we seek?

Thinking Part:
- aims
- measurements
- change ideas

Doing Part:
- testing ideas before implementing changes
<table>
<thead>
<tr>
<th>NEWS KEY</th>
<th>DATE</th>
<th>TIME</th>
<th>A+B</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>Respiration</td>
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<td>A+B scale 1</td>
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<td>SPO2 scale 2</td>
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<td>Al or oxygen?</td>
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<td>Blood pressure</td>
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<td>NEWS TOTAL</td>
</tr>
</tbody>
</table>

**Observation Chart for the National Early Warning Score (NEWS)**

**ADULT (16 years and over)**

Important: This chart is designed to support early detection of deterioration in patients. **The decision to use the new SPO2 scoring system is left to the discretion of individual units and should be formally agreed in the unit’s clinical notes.**

<table>
<thead>
<tr>
<th>Oxygen device codes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (respiratory aid)</td>
</tr>
<tr>
<td>B (intravenous fluid)</td>
</tr>
<tr>
<td>C (intramuscular injection)</td>
</tr>
<tr>
<td>N (nasal cannula)</td>
</tr>
<tr>
<td>O (oxygen mask)</td>
</tr>
<tr>
<td>S (suction)</td>
</tr>
</tbody>
</table>

**NEWS KEY**

- **DATE/DATE**
- **TIME/TIME**
- **A+B/Respirations**
- **A+B scale 1**
- **SPO2 scale 2**
- **Oxygenation Score**
- **A=Alt**
- **Al or oxygen?**
- **C**
- **Blood pressure**
- **Heart rate**
- **Pulse oximetry**
- **D**
- **Consciousness**
- **E**
- **Temperature**
- **NEWS TOTAL**

- **NEWS TOOLS**
  - **Monitoring Frequency**
  - **Evolution of care**
  - **Initials**
  - **S & D (SPO2, Nasal Cannula, Sedation, Oxygen)**

**Medical Illustration: November 2018 - 2017**

For FDA testing and review in 3 months

National Early Warning Score 2 (NEWS 2) (Royal College of Physicians 2017)
NEws Modified parameters

- Vital signs
- Values
- Modified NEWS
- Date & Time
- Duration
- Name & Birth
- Reason for modification

Recognition and Response

- NEWS Score
- Frequency of observations
- Guidance for patients with NEWS of 0
- Minimum 12 hour observations
- NEWS is not a substitute for competent clinical judgement. Any concern about a patient’s clinical condition should prompt an urgent clinical review

Low Response

1 - 4

Minimum 4-6 hourly observations

Possible acute illness or unstable disease

Medium Response

5 or 6 or 3

Minimum 1 hourly observations

Potential to deteriorate rapidly

High Response

7 or more

Continuous monitoring of observations

Immediately life threatening illness

Elevated NEWS: Clinical response pathway

If this score within accepted modified NEWS parameters? If Yes: Please continue to monitor as per directed frequency. If no: Please follow the pathway below:

- Inform registered nurse immediately
- Registered nurse must assess patient and decide:
  - Is increased frequency of observations required?
  - Is escalation of clinical care required?
- If NEWS score has a 3 in 1 parameter, please refer to medium response pathway

Document actions:
- If escalation occurred, please document this in section 1
- Nursing review to be documented in section 2

Section 1:

- Documented Escalation of care:
  - To be completed by staff member who escalated clinical care
  - Date
  - Time
  - NEWS score
  - Name and designation of nurse or doctor informed
  - Comments
  - Signature

Section 2:

Nursing assessment and review:

- To be completed by the registered nurse for all elevated NEWS scores outside accepted modified NEWS parameters
- Date & Time
- NEWS score
- Suspected sepsis
- Delirium suspected
- Specify ongoing frequency of monitoring
- Is Escalation to another clinician required?
- Immediate actions taken and plan for patient (If sepsis or delirium suspected, request emergency medical review)

Initial of nurse
### NEWS Modified parameters

<table>
<thead>
<tr>
<th>Vital sign</th>
<th>Accepted values and modified NEWS</th>
<th>Date &amp; Time</th>
<th>Duration</th>
<th>Name &amp; Bleep</th>
<th>Reason for modification</th>
</tr>
</thead>
</table>

**Recognition and Response** *(To be completed by staff member who has recorded NEWS score)*

- **NEWS Score**: 0
  - **Frequency of observations**: Minimum 12 hourly observations
  - **Guidance for patients with NEWS of 0**: NEWS is not a substitute for competent clinical judgement. Any concern about a patient's clinical condition should prompt an urgent clinical review.

**Elevated NEWS: clinical response pathway**
Algorithm to lead to escalation

Elevated NEWS: clinical response pathway

<table>
<thead>
<tr>
<th>LOW RESPONSE</th>
<th>MEDIUM RESPONSE</th>
<th>HIGH RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4</td>
<td>5 or 6 in one parameter</td>
<td>7 or more</td>
</tr>
<tr>
<td>Minimum 4-6 hourly observations</td>
<td>Minimum 1 hourly observations</td>
<td>Continuous monitoring of observation</td>
</tr>
<tr>
<td>Possible acute illness or unstable disease</td>
<td>Potential to deteriorate rapidly!</td>
<td>Immediately life threatening illness!</td>
</tr>
</tbody>
</table>

Is this score within accepted modified NEWS parameters? If Yes: Please continue to monitor as per directed frequency. If no: Please follow the pathway below:

- Inform registered nurse immediately
- Registered Nurse must assess patient and decide:
  - Is increased frequency of observations required?
  - Is escalation of clinical care required?
- If NEWS score has a 3 in 1 parameter, please refer to medium response pathway

Document actions:
- If escalation occurred, please document this in section 1
- Nursing review to be documented in section 2

- Complete screen for sepsis and delirium (4AI)
- Consider treatment escalation plan (TEP) and review CPR status
- Provide care in an appropriate clinical environment

Document actions:
- Document escalation in section 1
- Registered nurse review to be documented in section 2
- Medical responder to record assessment and plan in case notes or NHS deteriorating patient record

- Complete treatment escalation plan and review CPR status
- Assess need for transfer of clinical care to a level 2 or 3 care facility

Document actions:
- Document escalation section 1
- Registered nurse review to be documented in section 2
- Emergency medical responder to complete assessment and plan in NHSH deteriorating patient record or case notes
### Section 1: Documented Escalation of care

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>NEWS score</th>
<th>Name and designation of nurse or doctor informed</th>
<th>Comments</th>
<th>Signature</th>
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</tbody>
</table>

### Section 2: Nursing assessment and review

<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>NEWS score</th>
<th>Suspect sepsis?</th>
<th>Delirium suspected?</th>
<th>Specify ongoing frequency of monitoring?</th>
<th>Is Escalation to another clinician required?</th>
<th>Immediate actions taken and plan for patient: (if sepsis or delirium suspected, request emergency medical review)</th>
<th>Initial of nurse</th>
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<tbody>
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</tbody>
</table>
Sepsis 6

4AT and TIME

Glasgow Coma Scale
1 Are all the patient details clearly recorded at the top of the form? Ward, date, name, DOB.
2 How many SEWS observations were carried out on the chart?
3 How many of these observations had the date and time clearly recorded?
4 How many of these observations had the Respiratory Rate clearly recorded?
5 How many of these observations had the SaO2 clearly recorded?
6 How many of these observations had the Inspired O2% clearly recorded?
7 How many of these observations had the Temperature clearly recorded?
8 How many of these observations had the Blood Pressure clearly recorded?
9 How many of these observations had the Pulse/HR clearly recorded?
10 How many of these observations had the Neuro Response clearly recorded?
11 How many of these observations had a SEWS score clearly recorded?
12 How many of these observations had the SEWS score correct?
13 How many of these observations required an intervention?
14 How many of the observations that required an intervention, were acted on correctly?
15 Is SEWS Chart signed?

Plus EIC measures

<table>
<thead>
<tr>
<th>Observation chart for the National Early Warning Score (NEWS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ward No.</strong></td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td><strong>Respiratory Rate</strong></td>
</tr>
<tr>
<td><strong>Systolic Blood Pressure</strong></td>
</tr>
<tr>
<td><strong>Diastolic Blood Pressure</strong></td>
</tr>
<tr>
<td><strong>Heart Rate</strong></td>
</tr>
<tr>
<td><strong>Oxygen Saturation</strong></td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
</tr>
<tr>
<td><strong>Total NEWS Score</strong></td>
</tr>
</tbody>
</table>

17 Measures
Reduce Duplication, Waste and Increase Nursing Capacity

NO. PATIENTS reviewed (EIC)
NO OBSERVATIONS carried out (SPSP)

Correct frequency of repeated NEWS (EIC)
OBSERVATIONS with correct frequency of repeated NEWS – SPSP

OBSERVATIONS with accurate calculation of news score – SPSP

How many observations scored (SPSP) OF those, how many had:
• Documented evidence NEWS score has been acted upon
• Review, assessment and plan documented within news chart or medical/nursing notes – SPSP

SPSP Menu

***NEW*** WEB – BASED APP
DATE.....Friday 26th October 2018

Times.....1400, 1430, 1500, 1530, 1600

30 minute teaching sessions, starting on the hour and half hour

Venue..... 4th Floor, Teaching room

Future dates.....

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Times</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>29th Oct</td>
<td>Monday</td>
<td>1400, 1430, 1500, 1530, 1600</td>
<td>Highland Heartbeat Centre, Seminar Room</td>
</tr>
<tr>
<td>30th Oct</td>
<td>Tuesday</td>
<td>1400, 1430, 1500, 1530, 1600</td>
<td>Medical Education Room</td>
</tr>
<tr>
<td>1st Nov</td>
<td>Thursday</td>
<td>1430, 1500, 1530, 1600</td>
<td>Highland Heartbeat Centre, Seminar Room</td>
</tr>
<tr>
<td>6th Nov</td>
<td>Tuesday</td>
<td>0930, 1000, 1030, 1100, 1130</td>
<td>ED seminar room</td>
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<tr>
<td>8th Nov</td>
<td>Thursday</td>
<td>1000, 1030, 1100, 1130, 1200</td>
<td>Highland Heartbeat Centre, Seminar Room</td>
</tr>
<tr>
<td>9th Nov</td>
<td>Friday</td>
<td>1430, 1500, 1530, 1600</td>
<td>4th Floor, Teaching room</td>
</tr>
<tr>
<td>13th Nov</td>
<td>Monday</td>
<td>1400, 1430, 1500, 1530, 1600</td>
<td>Highland Heartbeat Centre, Seminar Room</td>
</tr>
<tr>
<td>15th Nov</td>
<td>Tuesday</td>
<td>1400, 1430, 1500, 1530, 1600</td>
<td>Highland Heartbeat Centre, Seminar Room</td>
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</tbody>
</table>

Training is OPEN TO ALL STAFF GROUPS, and is mandatory for all nursing staff.

Nursing staff are required to complete NEWS2 module on LearnPro.

NEWS2 will be implemented across NHS Highland on Monday 19th November 2018.
Early

• Recognition
• Response
• Review

For those we love and for those we care for to prevent harm and save lives....
Improving nurse management of stage 2 & 3 Acute Kidney Injury in the Emergency Department

Karen Johnstone
ED Senior Advanced Practitioner
Brainstorming – Initial thoughts

• Poor fluid balance recording
• Lack of knowledge re urinalysis
• Notable increase in AKI e-Alert calls
• Inconsistencies in AKI e-Alert response
• Poor communication of AKI detection
AKI literature review

• The National Confidential Enquiry into Patient Outcome and Death (NCEPOD) (2009)

• Approx 100,000 in-hospital deaths annually in the UK

• Approx 15-20% of ED admissions are diagnosed with an AKI in the UK

• Adding Insult to Injury (2009)
How did NHSL compare?

- Hospital Standardised Mortality Ratio (HSMR) - AKI was identified as a contributing factor in approx 10,000 deaths per annum across the three NHSL sites.
- Biochemistry e-Alert annual audit
- Inconsistencies highlighted in response and management of AKI
QI Tools / Project Planning

- Informal staff survey
- Process mapping
- Baseline audit
Baseline audit

- Clinical portal
- ED record
- Urinalysis
- Fluid balance

UHM Emergency Department - Baseline Audit Jan 2018
AKI stage 2/3

- Total no. of pts c/o fluid balance and urinalysis: 4%
- Total no. of patients with completed fluid balance only: 21%
- Total no. of pts with documented urinalysis only: 12%
- Total no. of pts with neither completed: 64%
QI methodology

- AKI education sessions
- SBAR AKI memorandum
- AKI champions
- AKI e-Alert care bundle
<table>
<thead>
<tr>
<th>TOPIC</th>
<th>OUTCOME</th>
<th>PROCESS</th>
<th>BALANCING</th>
</tr>
</thead>
</table>
| To raise awareness and improve current nursing management of stage 2/3 AKI patients in the ED. | To increase the percentage of complete urinalysis and fluid balance from 4% - 50% within a 5-week period. | % of nursing staff educated on AKI  
- Daily staff reminder via AKI memo  
- Recruitment of AKI Champions  
- % of e-Alert calls received by the ED  
- Compliance with AKI e-Alert CB | Increased staff satisfaction  
- Increased workload for biochemistry team  
- Improved staff morale through shared learning |
AKI care bundle

AKI e-Alert call to ED

Confirm patient name and AKI stage

Locate patient

- Waiting room
  - Inform REACT team
  - Document AKI stage on ED card
  - Prioritise for cubicle

- REACT
  - Inform REACT team

- Majors/ Minors
  - Document AKI stage on ED card
  - Alert receiving speciality
  - Prioritise for cubicle/ward transfer

- Resus
  - Inform allocated nursing team
  - Inform responsible clinician

**ACTION**
- Patient requires fluid balance monitoring and urinalysis

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Outcome measure result

Emergency Department

% of patients with complete urinalysis and fluid balance monitoring
Jan 2018 to April 2018

Education  AKI Memo  AKI Champions  e-Alert CB

Week 1: 1st-7th Jan  Week 2: 8th-14th Jan  Week 3: 15th-21st Jan  Week 4: 22nd-28th Jan  Week 5: 29th-31st Jan 19th March 2 26th March 3 2nd April PDSA 1.1-1.5 Week PDSA 2.1-2.2 Week PDSA 3.1-3.3 Week PDSA 4.1 Week 4 PDSA 4.2 Week 5

% Of patients with complete urinalysis and fluid balance monitoring  Median

4%  0%  0%  0%  0%  13%  17%  14%  30%  60%  63%  Median: 14%
Summary

• A total of 131 patients were included in this project.

• The % of urinalysis and fluid balance significantly increased from 4% to 63% following multiple tests of change cycles.

• A combination of staff education, champion support and an AKI e-Alert CB significantly enhanced the nursing management of AKI in the ED.

• An existing process has been enhanced, which has resulted in a better process and has ultimately improved patient safety and quality of care.
Reflection

- Limitations
- Strengths
- Sustainability
- Spread
Simple interventions can result in significant improvement!!!!

Thank you

Any Questions?
1. How do you see NEWS 2 as a way of aligning delirium and sepsis?

2. Having heard about the changes to NEWS 2, what do you see as the enablers and barriers to implementation of these?

3. There are many different ways to recognise and respond to patient deterioration. How would the recognition of an Acute Kidney Injury support this.....?