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| Report title: | Milton Keynes Emergency Department Sepsis Project | Date: 15 th November 2019 |
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Contents:

1. Purpose of the Report

This report provides a summary of the Milton Keynes project to introduce 'NEWS2 & Sepsis white boards' into the Emergency Department (ED) to improve the safety of patients at the point of care handover between ambulance and ED staff. The white boards were designed to allow staff to document essential information in time critical situations allowing all members of the health care team to have an overview of the patient's condition and treatments provided.

2. Context

The handover of vital information and initial assessment and treatment has the potential to be delayed by the EPR process that was introduced in May 2018.

Sepsis recognition and treatment is time critical and has a direct impact on survival rates. The handover of accurate information and patient assessment is essential.

The introduction of the EPR system posed both improvements and challenges to patient care. One such challenge was ensuring that vital information was documented in a timely manner and in a way that all members of the team can readily access. Patient care should not be compromised due to delays with accessing and inputting data into an EPR. This was originally highlighted during a joint sepsis simulation morning in ED with ambulance and ED staff. It showed that the average handover was taking 8 minutes which in turn was causing a delay in initiating sepsis treatment.

The potential benefits included:

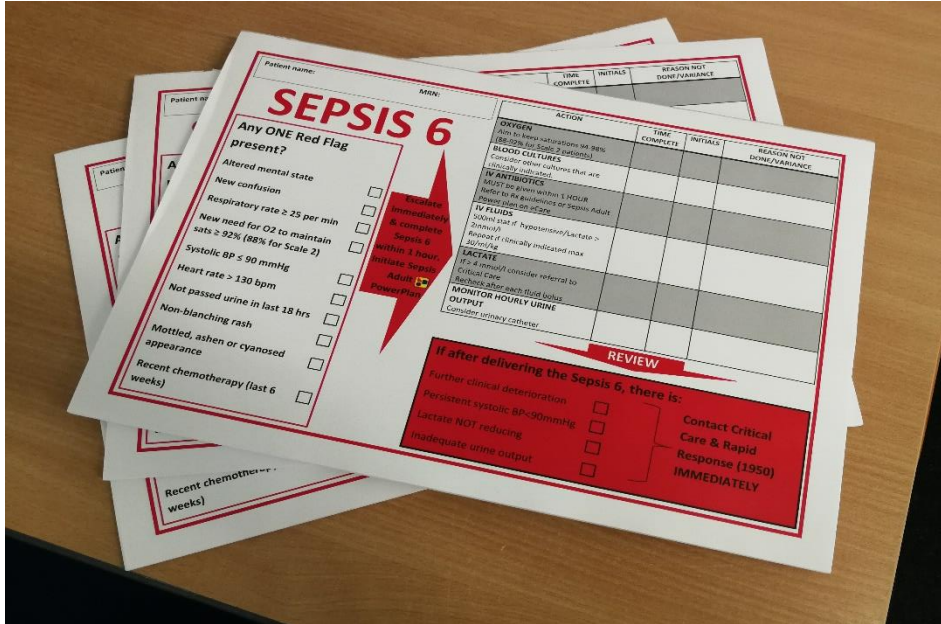
- More efficient handover between ambulance and ED staff and between ED teams and other members of the inter-professional team
- Promoting the use of NEWS2 as a common language between primary and secondary care
- Use of NEWS2 in a visual effective way
- Clear Sepsis 6 proforma
- Promoting the use of SBAR for clear and concise handover
- Example below:

| Name: | Date: | Time: | NEWS2 | Sepsis 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| S | <table border="1"> <thead> <tr> <th>Physiological parameter</th> <th>3</th> <th>2</th> <th>1</th> <th>Score</th> <th>0</th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td>Respiration rate (per minute)</td> <td>≥18</td> <td></td> <td>9-11</td> <td>12-20</td> <td></td> <td></td> <td>21-24</td> <td>≥25</td> </tr> <tr> <td>SpO₂ Scale 1 (%)</td> <td>≤91</td> <td>92-93</td> <td>94-95</td> <td>≥96</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SpO₂ Scale 2 (%)</td> <td>≤83</td> <td>84-85</td> <td>86-87</td> <td>88-92 ≥93 on air</td> <td>93-94 on oxygen</td> <td>95-96 on oxygen</td> <td>≥97 on oxygen</td> <td></td> </tr> <tr> <td>Air or oxygen?</td> <td colspan="2">Oxygen</td> <td colspan="2">Air</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Systolic blood pressure (mmHg)</td> <td>≤90</td> <td>91-100</td> <td>101-110</td> <td>111-219</td> <td></td> <td></td> <td></td> <td>≥220</td> </tr> <tr> <td>Pulse (per minute)</td> <td>≤40</td> <td></td> <td>41-50</td> <td>51-90</td> <td>91-110</td> <td>111-130</td> <td></td> <td>≥131</td> </tr> <tr> <td>Consciousness</td> <td></td> <td></td> <td></td> <td>Alert</td> <td></td> <td></td> <td></td> <td>CVPU</td> </tr> <tr> <td>Temperature (°C)</td> <td>≤35.0</td> <td></td> <td>35.1-36.0</td> <td>36.1-38.0</td> <td>38.1-39.0</td> <td></td> <td>≥39.1</td> <td></td> </tr> </tbody> </table> | | | Physiological parameter | 3 | 2 | 1 | Score | 0 | 1 | 2 | 3 | Respiration rate (per minute) | ≥18 | | 9-11 | 12-20 | | | 21-24 | ≥25 | SpO ₂ Scale 1 (%) | ≤91 | 92-93 | 94-95 | ≥96 | | | | | SpO ₂ Scale 2 (%) | ≤83 | 84-85 | 86-87 | 88-92 ≥93 on air | 93-94 on oxygen | 95-96 on oxygen | ≥97 on oxygen | | Air or oxygen? | Oxygen | | Air | | | | | | Systolic blood pressure (mmHg) | ≤90 | 91-100 | 101-110 | 111-219 | | | | ≥220 | Pulse (per minute) | ≤40 | | 41-50 | 51-90 | 91-110 | 111-130 | | ≥131 | Consciousness | | | | Alert | | | | CVPU | Temperature (°C) | ≤35.0 | | 35.1-36.0 | 36.1-38.0 | 38.1-39.0 | | ≥39.1 | | Oxygen | |
| | | | | Physiological parameter | 3 | 2 | 1 | Score | 0 | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Respiration rate (per minute) | ≥18 | | 9-11 | 12-20 | | | 21-24 | ≥25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | SpO ₂ Scale 1 (%) | ≤91 | 92-93 | 94-95 | ≥96 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | SpO ₂ Scale 2 (%) | ≤83 | 84-85 | 86-87 | 88-92 ≥93 on air | 93-94 on oxygen | 95-96 on oxygen | ≥97 on oxygen | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Air or oxygen? | Oxygen | | Air | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Systolic blood pressure (mmHg) | ≤90 | 91-100 | 101-110 | 111-219 | | | | ≥220 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Pulse (per minute) | ≤40 | | 41-50 | 51-90 | 91-110 | 111-130 | | ≥131 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Consciousness | | | | Alert | | | | CVPU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Temperature (°C) | ≤35.0 | | 35.1-36.0 | 36.1-38.0 | 38.1-39.0 | | ≥39.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | | | | Lactate | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | | | | Blood cultures | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R | | | | IV Antibiotics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | IV Fluids | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Urine output | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | NEWS2 total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Initial | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Current | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Body of the Report

a) Staff feedback

Due to high cost of the whiteboards, it was decided to trial the content of the whiteboards on A3 pads first. See sample below:



Following a 4-week trial of the pads, completed forms were collated and feedback was gained from the ED staff with regards the usefulness and content of the forms.

Disappointingly, only a handful of forms had been completed and the pads were constantly moved around and hidden from sight. Despite encouragement the feedback was mostly negative with regards to the usefulness of the pads.

Staff reported that the use of the pads and whiteboards was ‘going backwards’ to paper (old sepsis proformas) and they felt it ‘was another thing to have to do’. There was also concerns raised that the whiteboards may not be wiped clean between patients due to the high flow of patients through the department.

In view of this feedback, I attended several staff meetings to discuss with the team what they felt would help to improve the recognition and treatment of sepsis in ED.

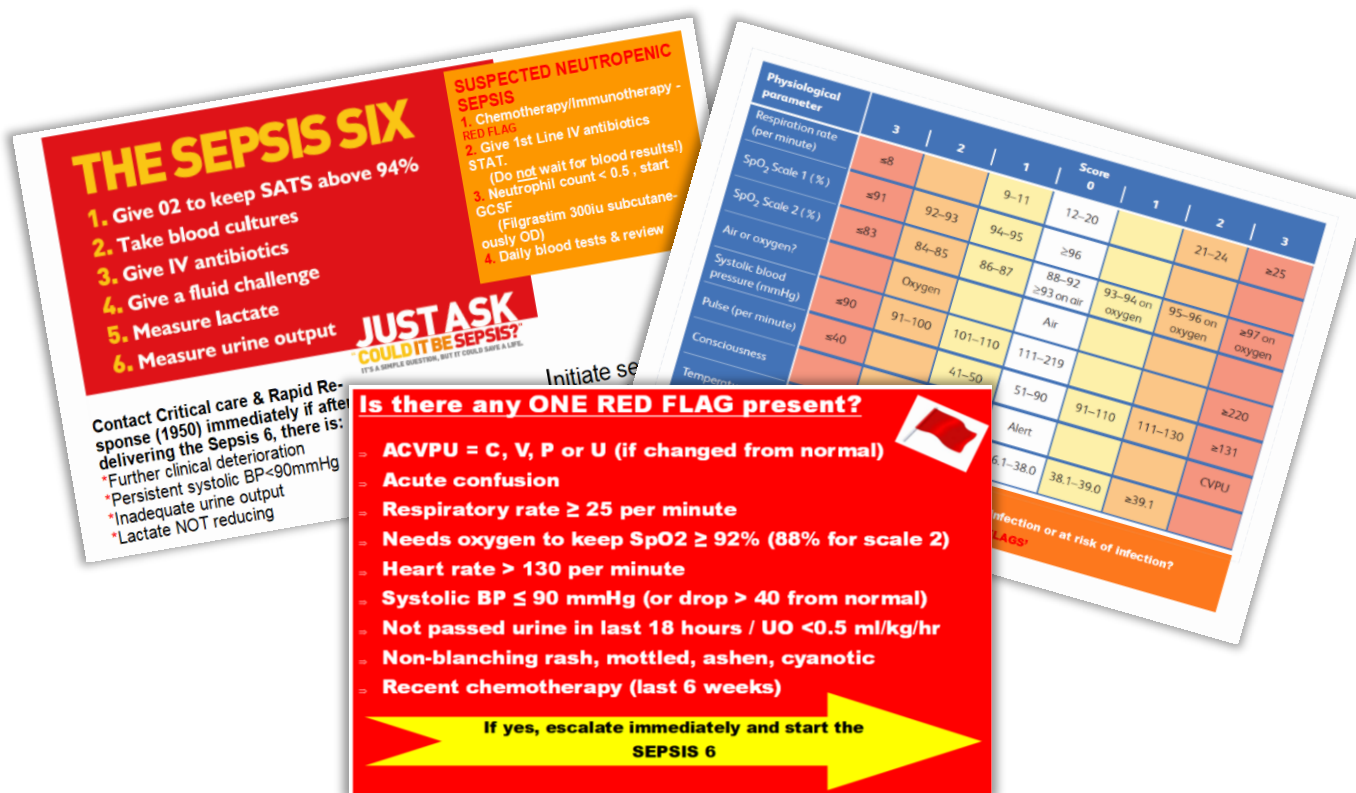
Suggestions included:

- More equipment to make sepsis 6 delivery easier (e.g. more drip stands)
- Individual staff lanyard cards with similar information as on the pads/whiteboards
- Recognition and reward for when excellence in care was demonstrated
- Further simulation training

b) Areas of focus

In response to the staff feedback (and suggestions) it was decided to

- design and purchase the sepsis & NEWS2 cards. Samples shown below:



- Promote the use of GREATix to highlight care excellence
- Design and purchase 'I Drive Away Sepsis' badges for staff members who demonstrate excellence in sepsis management. These have been designed and an initial quote obtained. Example below:



- Continue to provide sepsis training and simulation to ED to emphasise the importance of using NEWS2, the sepsis screening tool and sepsis 6.

c) Results

| | Pre-interventions | Post-interventions |
|--------------------------------------------------------------------------------------------------------|-------------------|--------------------|
| Average handover time (Ambulance to ED nurse) | 8 minutes | 5.2 minutes |
| Average antibiotic administration time (admission to injection time for patients with red flag sepsis) | 23 minutes | 10.2 minutes |

d) Lessons learnt

- It is essential to fully engage the staff before introducing any intervention. Although we had collaborated with the staff during the initial simulation session last year, we hadn't engaged the wider team. That may have explained the resistance we experienced with the pads and the idea of the whiteboards.
- New processes that involve additional tools were perceived as 'extra' work and a hindrance.
- Positive reinforcement of excellent care is highly valued amongst staff.
- Continued training and updates are essential in maintaining momentum and skill.
- Staff love the cards!

e) Costings

| | |
|----------------------------------|-----------------|
| 4 sepsis A3 pads | £14.00 |
| 150 sets of sepsis & NEWS2 cards | £102.75 approx. |
| 150 'I' Drive Away Sepsis badges | £282.00 approx. |
| | |
| Total: | £398.75 approx. |
| Original bid | £500.00 |
| Remaining funds | £101.25 |

Please note - The cost of the cards and badges will be an ongoing cost. We hope to use the remaining funds to buy cards and badges for new staff and those demonstrating excellence in sepsis management.

f) Next steps

- Next ED sepsis simulation training sessions are booked for 15th January and 12th February 2020.
- Badges to be awarded to staff demonstrating excellence in sepsis management.
- Cards to be given to all ED staff (nursing, medical and support staff) starting in the department.