A descriptive evaluation of clinician’s gaze behaviours during simulated paediatric emergencies

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Background/Aims

To define the gaze behaviour, standing positions and clinical performance of clinicians during a simulated paediatric emergency

Methods

• Observational study
• BHSCT governance approval
• Convenience sample
• Participants all undertook a standard 6 minute scenario
• Participants blinded
• Structured debrief

Eye gaze
• SMI ETG®
• 4 key areas of interest - airway, algorithm, chest and defib

Standing positions
• Momentary time sampling

Time to key interventions
• Review of video recordings
Results

6 paediatric trainees
27 participants
8 paediatric consultants
7 PICU consultants

Median time in seconds

<table>
<thead>
<tr>
<th></th>
<th>Bag and mask ventilation</th>
<th>Chest compressions</th>
<th>1st Shock</th>
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</thead>
<tbody>
<tr>
<td>Trainees</td>
<td>29.5</td>
<td>47</td>
<td>129</td>
</tr>
<tr>
<td>Paediatricians</td>
<td>34</td>
<td>60.5</td>
<td>142</td>
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<td>PEM</td>
<td>34.5</td>
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<td>123.5</td>
</tr>
<tr>
<td>PICU</td>
<td>27</td>
<td>32</td>
<td>105</td>
</tr>
</tbody>
</table>
Results

• Our study is the first to describe the gaze behaviour of clinicians in a simulated emergency.

• PICU consultants were fastest to all key clinical interventions and their gaze behaviour is very similar to that observed in experienced pilots.

• Although potentially perceived as experts, consultant paediatricians performed worst and had a similar gaze pattern to true novices [trainees].

• Their tendency to ‘perceptual narrowing’ in situations of high cognitive load has been described in novice drivers and increases the risk of missing key visual cues.

• Further research is needed to develop and evaluate how this could be used as an educational tool to teach novices.

• This may improve training and ultimately enhance the quality of care offered to patients in the resuscitation setting.

Conclusions