Neonatal Event Review: How long does an A, B, and D have to be?

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Significant clinical events such as apnea, bradycardia and desaturations happen frequently in the premature infant population. Documentation, confirmation, and response varied significantly among the nurses, secondary to the lack of specific parameters to assist the bedside nurse. The infant’s length of stay (LOS) in the Neonatal Intensive Care Unit (NICU) was potentially impacted related to the variation in documentation practices.

A collaborative team of nurses, nurse practitioners, educator, and physicians developed an evidence-based practice project to identify documentation parameters for significant clinical events in the NICU.

Practice Question

What is the best supporting evidence that defines and clarifies what is a significant clinical event as well as what should be documented in relation to these events in the NICU population?

Purpose

The purpose of this project is to develop a guideline for reviewing and documenting significant clinical events based on evidence found within the literature and external and internal expert medical opinions.

<table>
<thead>
<tr>
<th>Level of Evidence</th>
<th>Number of Studies</th>
<th>Summary of Findings</th>
<th>Overall Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
<td>Studies suggest most infants are event free by 37-40 weeks PMA, although extremely premature infants may not achieve this skill until 43 weeks PMA. Bradycardia episode is defined as HR &lt;80.</td>
<td>A</td>
</tr>
<tr>
<td>III</td>
<td>1</td>
<td>Nursing documentation was noted to be at discretion of each individual unit. Results suggest a need for better definitions of clinically significant events and promotion of a national guideline to promote safety and timely discharge for preterm infants. &quot;Individual units are encouraged to develop policies and procedures for caregiver assessment, intervention, and documentation of apnea/bradycardia/desaturation events as well as the duration of the period of observation before discharge.&quot; (Eichennwald, 2016, p. 5).</td>
<td>A</td>
</tr>
<tr>
<td>IV</td>
<td>1</td>
<td>Variable parameters and information</td>
<td>A,B</td>
</tr>
<tr>
<td>V</td>
<td>8</td>
<td>Variable parameters and information</td>
<td>A,B</td>
</tr>
</tbody>
</table>

PubMed and CINAHL databases were used to identify evidence, yielding 7 articles and 4 guidelines.

Outcomes

1. Based on your current understanding of our unit’s practice and your own practice, how long should a bradycardic event be (no apnea or desaturation) to be deemed clinically significant?
   a. < 5 seconds
   b. > 5 seconds
   c. < 10 seconds
   d. > 10 seconds

2. Based on your current understanding of your unit’s practice and your own practice, how long should a bradycardic event be if it is associated with apnea or a desaturation to be deemed clinically significant?
   a. < 5 seconds
   b. > 5 seconds
   c. < 10 seconds
   d. > 10 seconds

Recommendations

- Bradycardia 10 seconds, of > 5 seconds with desaturation or apnea
  - HR < 100 for < 33 weeks
  - HR ≤ 80 for ≥ 33 weeks
- Apnea > 20 seconds
- Desaturation
  - ≤ 80 for < 33 weeks
  - ≤ 82 for ≥ 33 weeks
- Only bradycardic events can be reviewed at the central monitor, desaturations and apnea need to be witnesses at the bedside
- Do not document events if associated with nipple feedings, document these events in the feeding record

Action Plan

- Unit based guideline
- Pre and Post survey of staff regarding practice
- Educational Program
- Video - How to measure clinical event on central monitor
- Bedside card for summarizing significant clinical event parameters
- Workflow for Response algorithm to alarms

<table>
<thead>
<tr>
<th>Event</th>
<th>≤ 31 Weeks</th>
<th>&gt; 31 Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bradycardia</td>
<td>&lt;100</td>
<td>&lt;60</td>
</tr>
<tr>
<td>Desaturation</td>
<td>≤80</td>
<td>≤82</td>
</tr>
<tr>
<td>Bradycardia &gt;10 seconds or &gt;5 seconds with A or D</td>
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Acknowledgements

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