Introduction

- Quality of cardiopulmonary resuscitation (CPR) directly influences outcomes from pediatric cardiac arrest.
- Pauses in compressions negatively impact clinical outcomes.
- Little is known about what factors contribute to these pauses.
- Our objective was to determine the frequency, duration, and causes for pauses during cardiac arrest.

Methods

- 26 simulated pediatric cardiac arrest scenarios each lasting 12 minutes were video recorded.
- Mock resuscitation teams were recruited from 10 centers.
- Events surrounding each pause in chest compressions were reviewed by 2 independent reviewers.
- Outcomes included the frequency, duration, and associated factors with each pause.

Results

- 256 pauses in compressions in 26 scenarios.
- Median of 10 (IQR 7-12) pauses per scenario.
- Median duration of pauses 5 (IQR 2-9) seconds.
- Median total pause duration of 68 (IQR 45-84) seconds per 12 min scenario.
- Most common actions: change of compressors (55%), pulse check (34%), rhythm check (30%), shock delivery (20%), and pad placement or reposition (15%).

Common Causes for Pauses During Chest Compression

<table>
<thead>
<tr>
<th>Causes</th>
<th>Number (percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shock Delivery</td>
<td>51 (20.0%)</td>
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<tr>
<td>Compressor Change</td>
<td>116 (45.7%)</td>
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<tr>
<td>Pad Placement/Reposition</td>
<td>38 (14.9%)</td>
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<tr>
<td>Patient reposition/examination</td>
<td>3 (1.2%)</td>
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<tr>
<td>Rhythm Check</td>
<td>77 (30.1%)</td>
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<tr>
<td>Pulse Check</td>
<td>86 (33.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>256 (100.0%)</td>
</tr>
</tbody>
</table>

Conclusions

- Nearly 1/5 of the pauses were greater than 10 seconds in duration which is not in concordance with AHA guidelines.
- The most common causes for pauses included change in compressors, pulse checks, and rhythm checks.
-Pauses initiated by team members were rarely verbalized.
- Simulation is an ideal environment in which to study opportunities for improved team efficiency during cardiac arrest scenarios.