Simulation for Clinical Preparedness for Pediatric Emergencies

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BACKGROUND

• Educational surveys were conducted in key areas in which pediatric care took place within our health system.

• Nurses expressed, “Being uncomfortable or having a lack of confidence in treating pediatric patients during emergency situations.

• It was identified that Pediatric Emergencies/Codes were low volume/high risk events within our organization.
ASSESSMENT

• Mock code training did not take place on a regular basis

• PALS certification was not required by all pediatric providers
REVIEW OF LITERATURE

• Morbidity and mortality associated with pediatric cardiopulmonary arrests have remained essentially the same for the last three decades (Auerbach, Kessler, and Foltin, 2011).

• Recall of guidelines and skills decline within weeks if not applied, with no guarantee that resuscitation efforts will be carried out with skill, speed, and accuracy (Hunt, Walker, Shaffner, Miller and Pronovost, 2008).

• Innovative simulation-based teaching strategies and reflective debriefing allow participants the opportunity to fully integrate knowledge and clinical decision-making (Jeffries & Rizzolo, 2006; Lasater, 2007; Driefuerst, 2009; Cheng, 2016).
DEVELOPMENT PROCESS

• Partnership with field experts
  – Villanova University
  – Illinois Emergency Medical Services for Children
  – Department of Public Health and Loyola University Health System
  – National League for Nursing (NLN)
  – Debriefing for Meaningful Learning © (Dreifuerst)
SAMPLE AND SETTING

• Registered nurses from a mid-Atlantic five-hospital health system, who had current PALS certification, and care for pediatric patients in the emergency department (ED), the inpatient pediatric unit, the ambulatory care center, or the post-anesthesia care unit (PACU).

• Simulation mock codes with debriefing occurred in off site simulation lab setting.
## DESIGN

This pilot study was a pretest-post-test comparative experimental design.

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<th>Intervention Group</th>
<th>Control Group</th>
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<tr>
<td>Baseline</td>
<td>PEPKA Pretest&lt;br&gt;Self Confidence in Pediatric Codes Survey Pretest</td>
<td>PEPKA Pretest&lt;br&gt;Self Confidence in Pediatric Codes Survey Pretest</td>
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<td>1 month</td>
<td>Simulation # 1 with Structured Debriefing&lt;br&gt;Pediatric Mock Code Critical Element Observer (PMCCCEO)&lt;br&gt;NLN Student Satisfaction and Self-Confidence in Learning</td>
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<td>5 months</td>
<td>Simulation # 2 with Structured Debriefing&lt;br&gt;Pediatric Mock Code Critical Element Observer (PMCCCEO)&lt;br&gt;NLN Student Satisfaction and Self-Confidence in Learning</td>
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<td>9 months</td>
<td>Final Simulation with Structured Debriefing&lt;br&gt;Pediatric Mock Code Critical Element Observer (PMCCCEO)&lt;br&gt;NLN Student Satisfaction and Self-Confidence in Learning</td>
<td>Final Mock Code Simulation&lt;br&gt;Pediatric Mock Code Critical Element Observer (PMCCCEO)</td>
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<td>11 months</td>
<td>PEPKA Pretest&lt;br&gt;Self Confidence in Pediatric Codes Survey Pretest</td>
<td>PEPKA Pretest&lt;br&gt;Self Confidence in Pediatric Codes Survey Pretest</td>
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INSTRUMENTS

• Pediatric Mock Code Critical Element Observer (PMCCEO)
• NLN Student Satisfaction and Self-Confidence in Learning
• PEPKA Pretest
• Self Confidence in Pediatric Codes Survey Pretest
RESULTS

• Statistically significant difference in knowledge between the intervention and control group on the PEPKA

• No statistically differences in self-confidence between the groups

• Confirmed the validity and initial reliability of the PEPKA knowledge test, self-confidence survey, and Critical Element Checklist
LIMITATIONS

• Limitation of this study was the number of participants. This was attributed to:
  – Low enrolment
  – Inclement weather
  – Use of off-site training facilities
  – Employee status change/attrition

• A second limitation was the lack of follow up by participants in completing the final survey.
Recommendations for Future Research

• To conduct a replication study with a larger sample in order to determine whether the educational design of simulation and debriefing has a significant influence on nurses’ knowledge, self-confidence, and competency with pediatric emergency preparedness.
FINAL THOUGHTS

• There has been a huge shift in healthcare interests to provide safe and effective care which measures its financial impact and return on investment as well as outcomes to improve practice.

• We no longer can just provide in service and education as the sole solution.

• With the burden of rising healthcare cost and demand of improve patient outcomes, thoughtful assessment of need and objective measurement of educational outcomes must be evaluated.
THANK YOU

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