Top Ten Things To Know
Outcomes Following Pediatric In-Hospital CPR for Bradycardia
with Poor Perfusion versus Pulseless Cardiac Arrest

1. Pediatric IHCA has about 27% survival to discharge.
2. Respiratory problems are the major cause of cardiac arrest in children, with hypoxia
being one of the most common potentially reversible causes of a pediatric
bradyarrhythmia.
3. This NRCPR* paper compared survival of children receiving CPR for bradycardia
with poor perfusion and the survival of children who presented with pulseless arrest.
4. Sixty-three percent (63%) of the pediatric patients with bradycardia and poor
perfusion never became pulseless, 84% received epinephrine or vasopressin,
suggesting that they were clinically judged to have cardiac arrest physiology.
5. Children who received CPR for bradycardia who never became pulseless had
significantly better outcomes (survival at 24 hrs [S24] 75%; survive to discharge
[SDC] 53%), than patients who progressed to ventricular fibrillation/ventricular
tachycardia (VF/VT), (S24 38%; SDC 20%) or who progressed to pulseless electrical
activity (PEA) or asystole (S24 30%; SDC 20%).
6. Children with subsequent VT/VF with initial bradycardia (18%) treated with CPR had
better survival outcomes than those with initial PEA/asystole (7%).
7. An interesting characteristic of the group receiving CPR for bradycardia was that
most were neonates (40%) or infants (35%).
8. The pediatric population receiving CPR for bradycardia had more respiratory support
pre-event, were more frequently located in the ICU, and were more likely to have had
a monitored, witnessed event.
9. This study supports the 2005 AHA Guidelines for CPR and ECC- Pediatric Advanced
Life Support¹(PALS) recommendations to initiate chest compressions for pediatric
bradycardia with poor perfusion.
10. Further research is needed to clarify how chest compressions impact outcomes for
children with impending and actual cardiac arrest.

*NRCPR is a performance improvement tool that can be used to identify and monitor key process variables and patient
outcomes for in-hospital cardiac arrest.  NRCPR.org  ECC website PALS

¹ 2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Part 12: Pediatric
CPR for Bradycardia with Poor Perfusion: Analysis of NRCPR Process and Outcomes. Pediatrics Published online November 16, 2009
PEDIATRICS (doi:10.1542/peds.2009-0727). Aaron Donoghue, Robert A. Berg, Vinay M. Nadkarni, Mary Fran Hazinski, Kathryn Roberts for
the American Heart Association National Registry of Cardiopulmonary Resuscitation Investigators.

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