



TRAINING MATTERS!!

HOW UTAH IMPROVED THE DOCUMENTATION
OF PRE-HOSPITAL PEDIATRIC VITAL SIGNS

A Performance Improvement Initiative

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INTRODUCTION

- Pediatric patients represent 10% of EMS transports nationally and 12% in Utah.
- Previous studies show inconsistencies in obtaining vital signs for this population in a pre-hospital setting.
- The 2009 *Utah Preventable Mortality Study* also noted deficiencies of documentation in the pre-hospital phase of care as an opportunity for improvement.



OBJECTIVE

- Assess whether educational interventions could improve the percentage of pediatric transport patients with a full set of vital signs documented

METHODS

- Retrospective analysis of pre-hospital data for pediatric patients between 2007 and 2010
 - n = 54,780
 - # of pediatric patients with at least one set of vital signs captured
of pediatric patient care reports
- Education Interventions
 - Instruction delivered to EMS medical directors
 - Instruction delivered to EMSC coordinators
 - Instruction delivered to EMS service providers
- Creation of Pediatric Vital Sign report in POLARIS

METHODS

➤ Loop Closure

➤ Analysis of pre-hospital data for pediatric patients between 2011 and 2014

➤ $n = 75,737$

➤ # of pediatric patients with at least one set of vital signs captured
of pediatric patient care reports

➤ Publication of results

➤ Multiple venues (EMS Committee, TSAC, EMSC, etc.)

➤ Re-distribution of instructions to EMS service providers for running POLARIS report

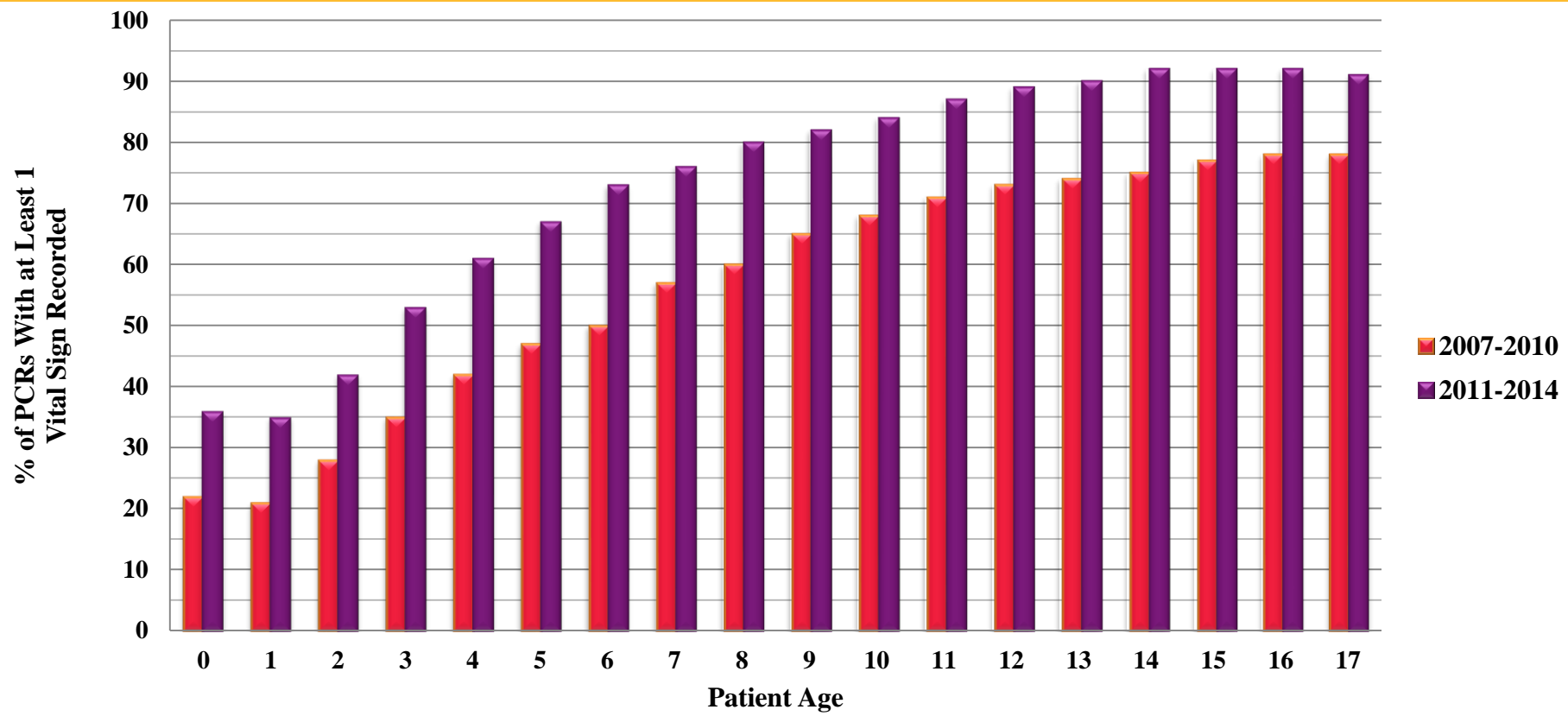
RESULTS

- Documentation of the four critical vital signs increased by double digits in all four categories.
 - Measurement of SpO₂ increased most consistently across all age groups over time
 - Providers obtained RR and HR near 90% of the time across all age groups after the educational training
 - BP remains the most inconsistently obtained vital sign, especially in younger pediatric patients, with children <3 years of age having a documented BP in <50% of transports



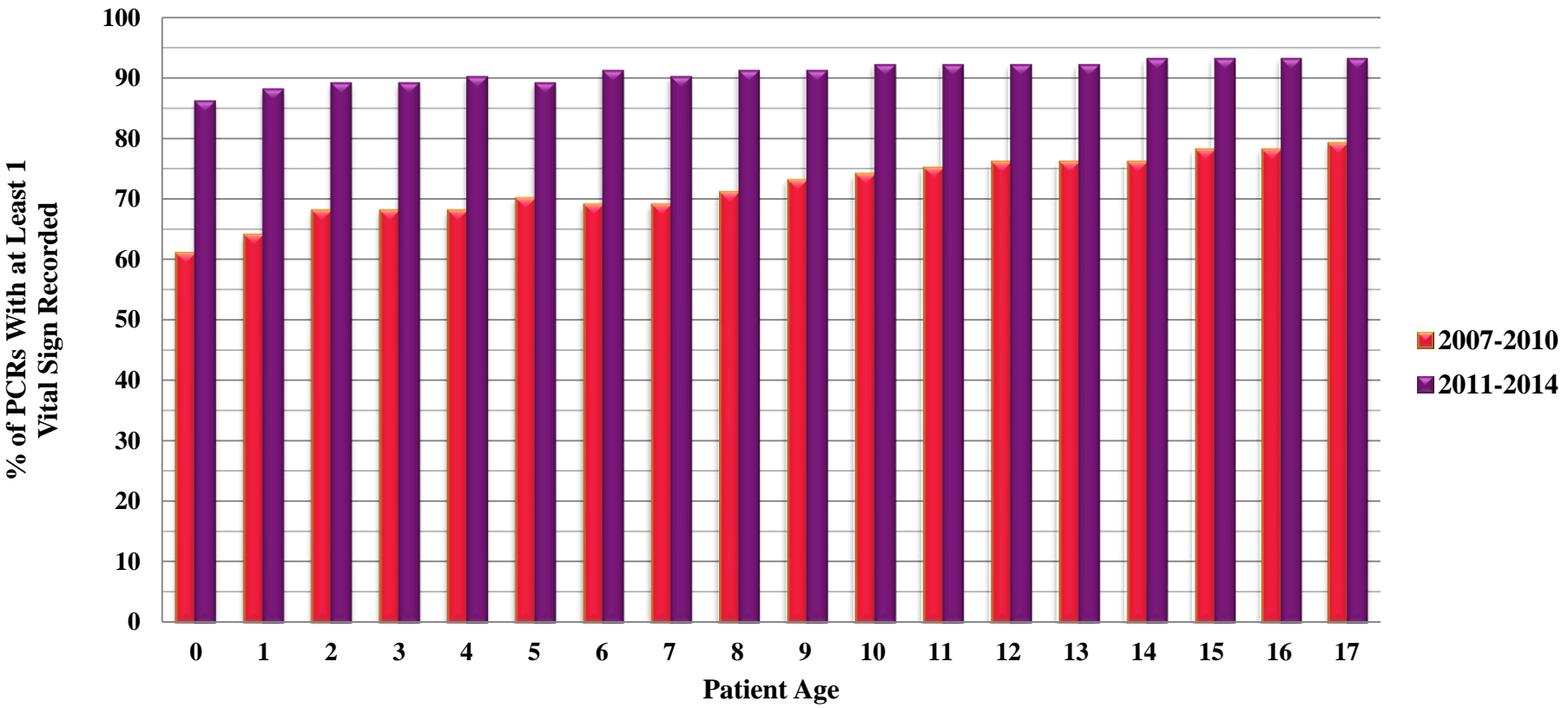
RESULTS - SBP

SYSTOLIC BLOOD PRESSURE



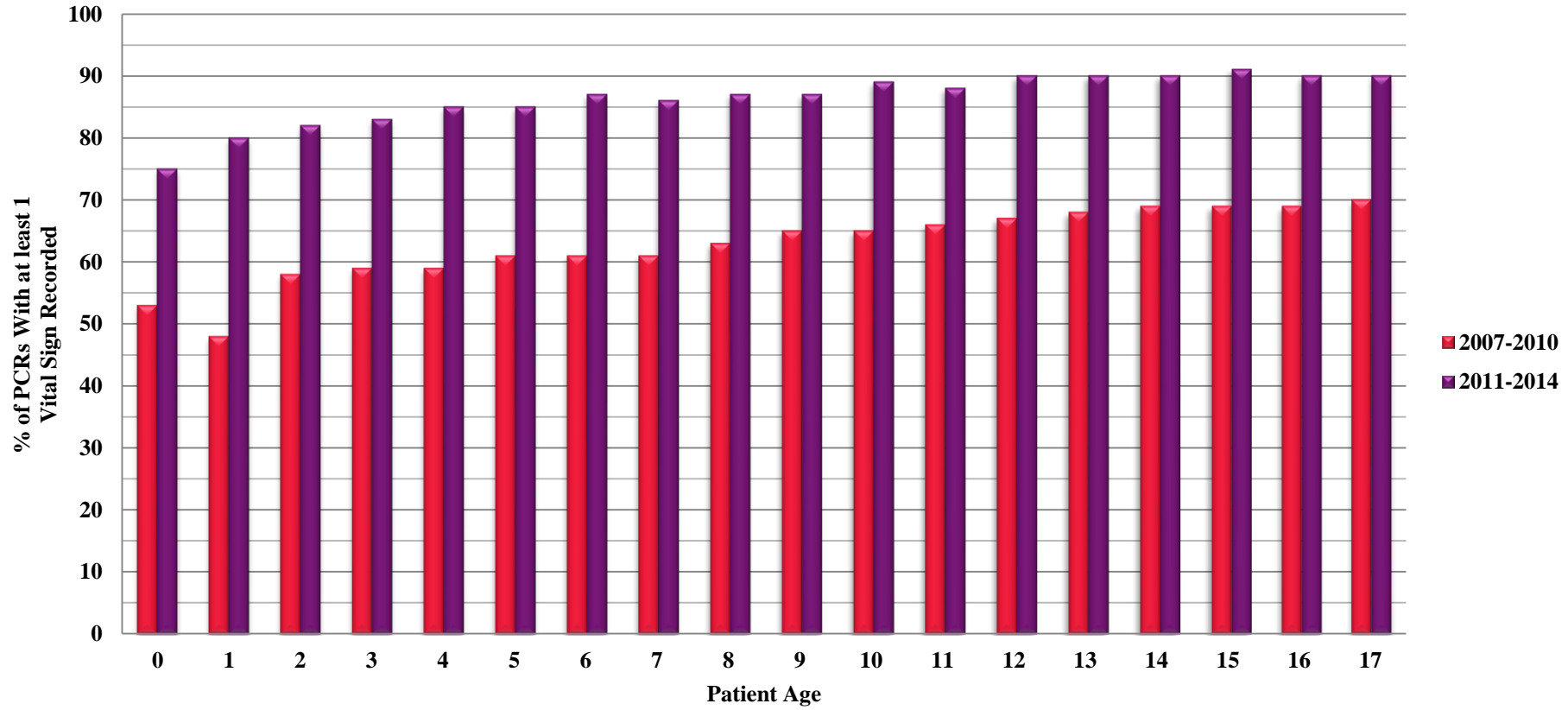
RESULTS - HR

HEART RATE



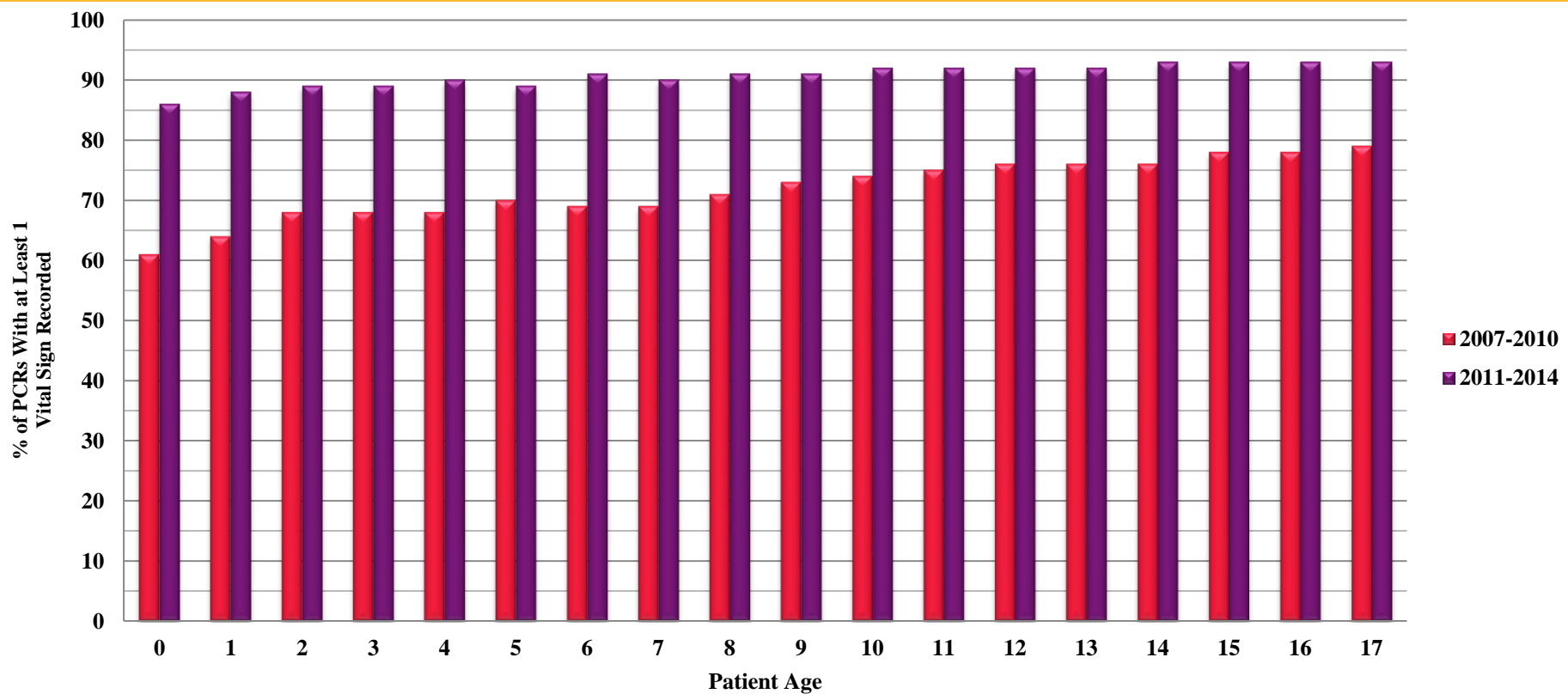
RESULTS - SPO₂

PULSE OXIMETRY



RESULTS - RR

RESPIRATORY RATE



RESULTS - SUMMARY

- Documentation of the four critical vital signs increased by double digits in all four categories.
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 - Providers obtained RR and HR near 90% of the time across all age groups after the educational training
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CONCLUSION

- EMS providers in Utah improved their practice of documenting four pediatric vital signs between 2007 and 2014.
 - Obtaining a blood pressure, especially in younger children, continues to be a challenge.
 - Educational interventions designed to encourage EMS providers to obtain vital signs resulted in an increase in the percentage of pediatric transports with partial vital signs documented.
 - More work remains to be done.