Paramedic – Evidence Based Medicine (P-EBP) Program

Paramedic CAT (Critically Appraised Topic) Worksheet

Title: Pediatric Assessment and Diagnostic Equipment
Report By: Melissa Berry
2nd Party Appraiser:
Clinical Scenario: Paramedics are dispatched for an inter-facility transport for a one year old female who had a febrile seizure. Patient was brought to the facility earlier and has been treated with Ativan and Tylenol and is now being transferred to another facility for a consult with a pediatrician.

PICO (Population – Intervention – Comparison – Outcome) Question:
Is the use of pediatric diagnostic equipment (ie. SpO2, Blood Pressure Cuff, Pediatric Defibrillator Pads, Pediatric Electrodes) compared to the pediatric assessment triangle (Appearance, Work of Breathing, Circulation/Skin colour) provide a more thorough assessment and change the treatment or outcomes for the patient.

Search Strategy: (Paediatric) AND (Hospital AND Emergency) AND (Pediatric Assessment Triangle)

Search Outcome: 3

Relevant Papers:

AUTHOR, DATE	POPULATION: SAMPLE CHARACTERISTICS	DESIGN (LOE)	OUTCOMES	RESULTS	STRENGTHS/ WEAKNESSES
Keahey, L., Bulloch, B., Pollack, C.V., Claark, S., and Camargo, C.A. Jr. (2002)	If initial SaO2 of a pediatric patient predicts admission to the hospital	Prospective multicenter study -LOE 2	SaO2 of 88% or less were 32 more likely to be admitted than those with an SaO2 of 100% The admission rate decreased with increasing SaO2	This study does not support that SaO2 alone is a clinically useful predictor of hospital admission	+ largest study to date -ED based so may be difficult to apply these results to all patients with asthma -only initial Sa02 was used
Gausche-Hill,M., Eckstein, M., Horeczko,	Are paramedics able to use the Pediatric Assessment Triangle (PAT) as an assessment tool	Prospective Observational study -LOE 3	To identify a correlation of PAT Paramedic Pattern and	Paramedics using PAT in the field were able to predict	-No second provider to complete a study form independently -Used a chart

T., McGrath, N., Kurobe, A., Ullum, L., Kaji, A., Lewis, R. (2014)			PAT Paramedic Impression	the stability or instability of a patient. The use of PAT in the field was consistent with the proper pre-hospital intervention	review +Relatively large sample
Horeczko, T., Enriquez, B., McGrath, N., Gausche-Hill, M., Lewis, R. (2013)	Triage nurses performed the Paramedic Assessment Triangle (PAT) on all patients presenting to the pediatric department	Prospective Observational Study -LOE 3	The structured assessment of the initial PAT is able to readily and reliably identify high-acuity patients even when it comes to further evaluation	Children that were deemed stable with the use of the PAT were almost 10 times more likely to be stable on further assessment	-several charts were excluded -Lapsed time between initial PAT and assessment by pediatrician or pediatric nurse practitioner +Blinded chart review

Comments: -pediatric research is limited
- Most studies were performed in-hospital
- Research was fairly current
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Consider: *Why would you NOT change practice, based on this article?*
The PICO drift became evident very early on while performing this project. Currently, there is limited pediatric equipment on our ambulance and with this limited research; it is evident that SaO2, in relation to asthmatic patients does not accurately predict future outcomes. However, the PAT seems to better predict the stability or instability of a patient.

Clinical Bottom Line:
From these articles it is apparent that there needs to be more research done into this PICO question. However, paramedics and nurses are capable of readily and reliably using the PAT as a triage tool in order to

determine the stability and instability of a pediatric patient. In fact, it is able to predict the stability of a patient on further assessment.
To tie it in with the PICO question there is the article that is related to the fact the SaO2 are not necessarily a predictor of the treatment outcome for this patient.

References:

Keahey, Laine, MD; Bulloch, Blake, MD; Becker, Allan, B., MD; Pollack, Charles Jr, V., MA, MD; Clark, Sunday, MPH; Camargo, Carlos Jr, A., MD, DrPH. (2002) Initial Oxygen Saturation as a Predictor of Admission in Children Presenting to the Emergency Department with Acute Asthma, *Annals of Emergency Medicine. 2002; 40:300*-307.

Gauche-Hill, Marianne, MD; Eckstein, Marc, MD, MPH; Horeczko, Timothy, MD, MSCR; McGrath, Nancy, RN, MSN, CPNP; Kurobe, Aileen, MD; Ullum, Linda, RN, PM; Kaji, Amy H., MD, PhD; Lewis, Roger J., MD, PhD. (2014) Paramedics Accurately Apply the Pediatric Assessment Triangle to Drive Management. *PREHOSPITAL EMERGENCY CARE*. 2014;Early Online: 1-11.

Horeczko, Timothy, MD, MSCR; Enriquez, Brianna, MD; McGrath, Nancy E., MN, RN, CPNP-AC/PPC, CEN; Gausche-Hill, Marianne, MD; Lewis, Roger J., MD,PhD. (2013) The Pediatric Assessment Triangle: Accuracy of its Application by Nurses in the Triage of Children. *Journal of Emergency Nursing*. 2013; 39:2.