

Paramedic – Evidence Based Medicine (P-EBP) Program

Paramedic CAT (Critically Appraised Topic) Worksheet

Title: *Paramedic's recognition of sepsis*

Report By: *Luke Slysz*

2nd Party Appraiser: *Jennifer Greene*

Clinical Scenario:

You arrive on scene for a 38 y/o female, who has a 7 day history of general malaise – Patient is found in bed, febrile presenting with an altered mental status. The patient is found to be septic. Rapid treatment of fluid therapy as well as rapid transport result in early notification of suspected sepsis presentation, this allowed ED staff to initiate IV antibiotics early for a more positive outcome.

PICO (Population – Intervention – Comparison – Outcome) Question:

In adults who are SIRS positive or septic, does paramedics early recognition compared to the traditional triage system result in early treatment and less admissions an ICU.

Search Strategy:

((EMS OR paramed OR EMT) AND (sepsis OR infection OR bacter*) AND Recognition)*

Search Outcome:

34



Paramedic - Evidence Based Medicine (P-EBP) Program

Relevant Papers:

AUTHOR, DATE	POPULATION: SAMPLE CHARACTERISTICS	DESIGN (LOE)	OUTCOMES	RESULTS	STRENGTHS/ WEAKNESSES
Studrek, J.R. 2013	Adults with suspected infection, evidence of systemic inflammation & either hypotension or elevated lactate 311 Patients overall, 160 transported by EMS.	Prospective observational study.	Rapid recognition of sepsis prehospitally to have more rapid treatment and a shorter time to antibiotics.	Within the 51.4% (160) of patients who were transported prehospitally they had shorter time to antibiotics (111 vs. 146 minutes, P = .001) Within a shorter time to early goal-directed therapy (119 vs.160 minutes, P= .001)	Study only used one EMS service Study only used one institution. Could have used a more specific sepsis criteria. Had a good number of participants.
Greene, Robert S. 2015	Adult patients who were dispatched as follows: having abdominal pain, having breathing problems, being sick, having unknown problems, being unconscious/fainting, having chest pain, or any case in which paramedics considered sepsis a possible diagnosis. 629 Patients overall	Prospective observational study.	Paramedics ability and accuracy using a pre-hospital sepsis screening tool and how it compared to blind, independent documentation of the EP (emergency physician)	Paramedics identified 170/629 (27.0%) patients as septic, while EPs identified sepsis in 71/629 (11.3%) patients The sensitivity and specificity of paramedic diagnoses of sepsis compared to EP diagnoses were 73.2% (95% CI 61.4–83.0) and 78.8% (95% CI 75.2–82.2)	- Study used a screening tool to identify patients with any degree of sepsis, not only severe. This may have caused increased recognition sensitivity in paramedics - A broad population was used in this study, which was beneficial in recognising more sepsis cases.

Paramedic - Evidence Based Medicine (P-EBP) Program

Consider:

While looking at these studies I recognized the importance in early recognition of sepsis. I also noted that depending on which criteria paramedics follow to recognize sepsis there is a varying degree in the sensitivity of the recognition. Paramedics should continue to give working diagnosis of sepsis while giving report to the receiving facility if they fall within sepsis criteria. This will allow more rapid treatment of sepsis, I also would recommend further research on this to evaluate whether or not paramedics have adequate recognition to potentially initiate antibiotic treatment prehospitally.

Clinical Bottom Line:

With specified criteria, paramedics are easily able to recognize sepsis prehospitally.

References:

Studnek, J. R., Artho, M. R., Garner, C. L., & Jones, A. E. (2012). The impact of emergency medical services on the ED care of severe sepsis. *The American journal of emergency medicine*, 30(1), 51-56.

Green, R. S., Travers, A. H., Cain, E., Campbell, S. G., Jensen, J. L., Petrie, D. A., ... & Patrick, W. (2016). Paramedic Recognition of Sepsis in the Prehospital Setting: A Prospective Observational Study. *Emergency medicine international*, 2016.

