

Review Table

Authors and Origin	Date	Research Design	Number of Subjects	Research Aim	Key Research Results	Strengths	Limitations	Key Themes
Alam et al Netherlands	2018	RCT (Randomised control trial)	2698	Comparison of pre-hospital antibiotic administration versus usual care on mortality	28-day mortality was 8% for both groups Average time to antibiotics (TTA) was reduced by a total of 96 minutes	Random group assignment Pre-trial sepsis training given Large sample	TTA measured from arrival at ED. Randomisation violations No control for sepsis training	4,5
Andersson et al Sweden	2018	Quantitative (retrospective data collection)	961	Factors most associated with 28-day survival in the early chain of care	Recognition of sepsis by EMS decreased mortality EMS use was associated with higher mortality	Representative population Variety of measured outcomes	Missing data reduces validity No consideration for disease severity in each group	2,3,5
Band et al USA	2011	Quantitative (secondary analysis of data)	963	Evaluating the effect of EMS arrival (vs. non-EMS) to ED on TTA and in-hospital mortality	EMS arrival reduced average TTA by 36 minutes No improvement to in-hospital mortality rates	Adjustments were made to account for differences in disease severity between the groups	Patients may have been mis-grouped due to missing data No consideration for effect fluids given by EMS	1,4,5

Chippendale et al UK	2018	Prospective cohort study	113	Competencies of trained paramedics in delivering pre-hospital sepsis care	Paramedics were able to take uncontaminated blood samples and administer antibiotics in a safe way	UK based Explores all of requirements for pre-hospital care – not just antibiotics	Small sample and study period No attempt to determine numbers of false negatives	3,4
Herlitz et al Sweden	2012	Systematic review	7237 (total in 12 studies)	Evaluate current findings regarding pre-hospital care for sepsis	Half of sepsis patients use EMS services Prognosis reduces with each hour of delay in treatment	Study design allows combination of multiple findings	Variety of studies, not all relevant to research question	1,2,3,4
Pike et al UK	2015	Experimental design without control group	70	Research effectiveness of pre-hospital sepsis care	Paramedics are good at sepsis recognition Safe and timely administration of antibiotics	UK based Utilisation of 'sepsis six bundle'	Small sample No control Only 2 types of sepsis treated	3,4
Seymour et al	2017	Retrospective cohort study	2638	Do delays from medical contact to TTA increase in-hospital mortality	Delay in TTA from first medical contact increased mortality ED delays were independently	Large sample size	No comparison to non-EMS patients First medical contact does not represent initial symptom	1,4,5

USA					significant, pre-hospital delays were not		onset	
Studnek et al	2012	Prospective observational study	311	Comparison of time to treatment between EMS and non-EMS patients in ED	Disease severity was worse in EMS EMS patients had shorter TTA Quicker treatment when sepsis identified by EMS	Results were statistically significant Participants identified systematically	No use of pre-hospital antibiotics Single-centre study Mortality not considered	1,2,3,4
USA								
Walchok et al	2017	Retrospective cohort study	1185	To determine whether paramedics can diagnose and treat sepsis in the pre-hospital environment	Paramedics were able to accurately recognise sepsis They can also administer antibiotics and obtain blood safely	Pre-trial sepsis training given Patients identified using structured sepsis tool Demonstrates safe practice by paramedics	Missing data Single centre study No consideration of patient outcomes	3
USA								
Wang et al	2010	Observational cohort study (extracted from parent study)	4613	Observe the role of EMS in sepsis care to identify areas of improvement	One third of ED patients are seen by EMS initially EMS patients had higher	Large sample Identification of a need for improved pre-hospital sepsis care	Lacks pre-hospital data Disregards pre-hospital treatment or transport times	1,2,5

USA					severity of disease and higher mortality			
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Key Themes:

1. Degree of EMS involvement in sepsis patients
2. Disease severity in EMS sepsis patients
3. Recognition of sepsis by EMS
4. Time to antibiotics (TTA)
5. TTA (and other treatment) effects on mortality

