Clinical Utility of the epoc Blood Analysis System in the Pre-hospital Setting

Transforming pre-hospital care
to improve patient outcomes

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The epoc Blood Analysis System can play a vital role in enhancing prehospital care and saving lives

Pre-hospital personnel, including emergency medical services (EMS) first responders, EMTs, and paramedics, serve a critical role in improving the outcomes of both acute diseases and acute exacerbations of chronic illnesses.[1]

Some potential scenarios for use of point-of-care testing POCT in the pre-hospital setting include:[2,3]

- Identification of hyperkalemia (high potassium) as the cause of EKG changes that may precede a cardiac arrest
- Identification of an elevated lactate level, which could be an indicator of septic shock in the presence of a known infection
- Measurement of creatinine to identify kidney injury
- Blood gas testing to distinguish respiratory distress from respiratory failure, determine who should receive CPAP or intubation, and monitor/adjust ventilator settings

Point-of-care blood analysis systems that provide on-the-scene measurements have been demonstrated to be valuable tools in improving patient outcomes.[3,4]

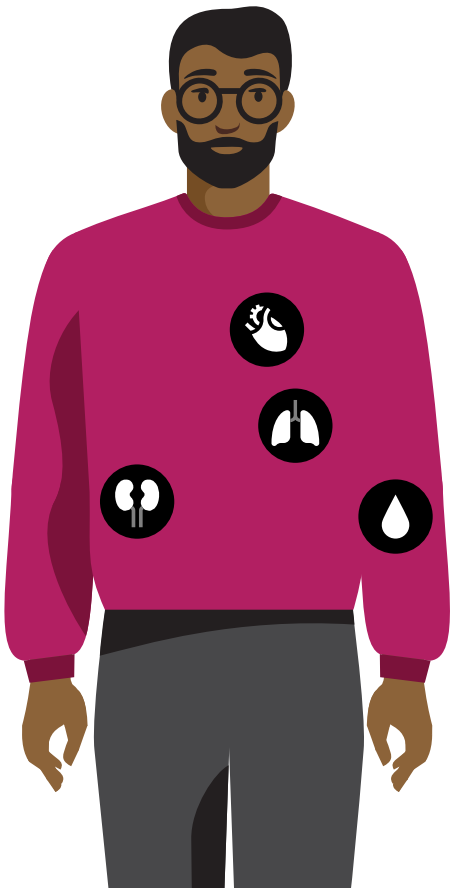

Table 1. Indications for the use of pre-hospital blood analysis in emergency situations.[1-13]

	Indication	Test
1	All forms of dyspnea or hypoxia	Blood gases
2	Cardiopulmonary resuscitation	Blood gases and electrolytes
3	Suspected acidosis	Blood gases and electrolytes
4	Cardiogenic shock resistant to therapy	Blood gases and electrolytes
5	Control of mechanical ventilation	Blood gases
6	Cardiac arrhythmias and tachycardia	Electrolytes
7	Sepsis, septic shock, and hypovolemia	Lactate
8	Diabetes, altered mental state, seizure, tachycardia, organ injury, trauma, and burns	Glucose
9	Internal or external hemorrhage, estimation of blood loss	Hemoglobin and hematocrit
10	Hydration status	Electrolytes
11	Kidney function prior to administration of contrast agents in CT or MRI	Creatinine

With the epoc® Blood Analysis System, you can quickly obtain and assess critical results in pre-hospital settings.*

Test Card Features	Test Card
Room-temperature storage	
Bar-coded with lot and expiration for error-free test panel recognition	
92 µL sample: arterial or venous whole-blood syringe 90 µL sample: whole-blood capillary	
Results available in <1 minute from sample application	
Simplified inventory management	

Device should be used on a flat, stable surface.

Published reports demonstrate that emergency medical services that have implemented the epoc system have experienced the value of adding point-of-care diagnostic testing to their pre-hospital care.[7,8]

A North Carolina hospital-associated critical care transport team implemented the epoc Blood Analysis System as a way to begin sepsis treatment in the field.[11] Using the epoc system to obtain a lactate level in the field helped them achieve their goal:

"In the first year they reduced mortality from 47% to 24%, eventually dropping to 14%."

Additionally, they reported:

"We've found that nearly half the time someone runs labs in one of our vehicles, they can directly link that to a change in the care provided to that patient."

A Texas EMS agency reported using the epoc system on approximately 50% of their calls, referring to the lab results it provides as "a game changer" and reporting that the response from receiving facilities was quite positive:[8]

"They're even happier when you walk in with initial labs in hand and explain your treatment plan and follow-up labs showing improvement and/or complete resolution of the issue."

"It alleviates a lot of the workload, as the nursing staff isn't scrambling to draw labs, and allows the staff to focus on a proper transfer of patient care."[8]

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