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Literature Review on the Effectiveness of POC Lactate Tests for Post-Operative Sepsis Discharge

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Project title:

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Background:

Every year in the USA, there are at least two million surgery-related infections; around 11% are derived from decompression spinal cord surgery. Generally, later detection of sepsis leads to significant burdens on the healthcare system; this manifests financially, temporally, and in poorer patient outcomes. “SepsisCheckToGo” is a toolkit aimed to minimize the number of sepsis complications in spinal surgery patients postoperatively; the kit would include a pulse oximeter, thermometer, and fingertip POC lactate tests to detect early sepsis signs after discharge and before the follow-up visit (which would occur around one month after initial discharge).

Methods:

Our team did a literature review on NIH PubMed; we aimed to gather existing information on the effectiveness of point-of-care lactate tests. After compiling relevant data, our team analyzed each article for statistics on the effectiveness of point-of-care lactate tests in the context of post-surgical usage. These findings were analyzed for any relevant information on sepsis prevention.

Results:

Data from many different studies showed that point-of-care finger lactate tests have reliable accuracy in blood lactate values. The tools were compared to gold-standard tests and maintained accuracy while being easy to use. However, there is a significant lack of evidence for the contribution of point-of-care lactate testing in improving rates of post-operative sepsis.

Conclusion:

Point-of-care lactate tests are simple for healthcare providers to use in a variety of different contexts; thus, they are reliable for quick measurements of lactate levels. Unfortunately, there is lack of evidence that this has much utility in patient diagnosis/management to cause any significant changes in patient outcome, particularly in the detection/prevention of genuine sepsis. Therefore, this tool may not be useful for the “SepsisCheckToGo” kit, as it could increase healthcare costs and add unnecessary steps to patients’ post-surgery steps without real evidence of alleviated outcomes.