ARTICLE:
- Citation: Mikkelsen, ME et. Al. Factors Associated With Nonadherence to Early Goal-Directed Therapy in the ED. Chest 2010;138;551-558
- Country: USA
- Funding Sources: Partial funding by NIH

PURPOSE:
- Research Question(s): to identify potential barriers to the implementation of EGDT in the ED by determining factors associated with noninitiation of EGDT.

- Hypothesis: Stated hypothesis of multiple factors associated with patient, clinician, and organization. No specific predictions.

DESIGN:
- Study Design: Retrospective chart analysis via EMR keyword search.

- Dependent / outcome Variable(s): Patients were categorized into either EGDT initiated or non-initiated (whether a central a venous catheter was placed). Subgroup analysis of whether EGDT was completed by whether EDGT goal vitals/SCVO2 were met.

- Independent / research Variable: Patient and clinician specific data for each positive or negative.

SETTING / SUBJECTS:

- Subjects:
  - Study population: ED patients in septic shock

  - Inclusion / Exclusion criteria:
    Inclusion: “eligibility was defined as a serum lactate ≥ 4 mmol/L in
hemodynamically stable patients (occult shock) or systolic BP < 90 mm Hg after volume resuscitation (1,500 mL)

Exclusion: if criteria for severe sepsis were not met, if serum lactate was not measured (, 2% of exclusions), or if the placement of a central venous catheter (CVC) was refused by the patient or their proxy (n 5 15).

- Number (control / intervention groups): 2
- Demographics: ED patients 18yo or older
- Attrition: None

METHODS:
- Interventions: None

- Study Groups: EGDT initiated and non-initiated patients

- Instruments:

- Data Collection: Demographic data or patients and clinicians in each group

DATA ANALYSIS:
- Level of Data: X Categorical   Ordinal   Interval
- Statistics Used: Multivariable logistic regression

- What, if any, confounding variables were controlled for / adjusted for: Patients refusing central line were removed from statistical analysis.

RESULTS:
- Brief answers to research questions: EGDT was not initiated in 142 eligible patients (42%). EGDT was not completed in 43% of patients in whom EGDT was
initiated. Compliance with the protocol varied significantly at the physician level, ranging from 0% to 100%. Four risk factors were found to be associated independently with decreased odds of initiating EGDT: female sex of the patient (P< .001), female sex of the clinician (P< .041), serum lactate (rather than hemodynamic) criterion for EGDT (P< .018), and non-consultation to the Severe Sepsis Service (P< .001).

- **Additional findings:** No change in clinical outcomes of either patient population.

- **Other possible explanation for findings:** N/A as study is observational only.

- **Limitations?:** The study didn’t really test for EGDT use. It only tested for placement of central venous catheter and achievement of the goals of EGDT. It was not able to test how the clinician got from CVC placement to the goals. In the original EGDT study, both arms used a central venous catheter. So this doesn’t really test for use of EGDT at all.

**IMPLICATIONS FOR PRACTICE:**
- **Applicable to this clinical practice:** None. This study looked at poorly chosen start and endpoints to determine the use of EGDT and removed 15 patients in which EGDT was attempted, but refused further skewing numbers. Better records are needed to perform this study with more precision.

- **Feasibility (cost, resources, etc):** Not relevant.

- **Clinically Relevant:** The idea that EGDT is not being used in the ED is important and this study attempts to highlight that. While the study did a poor job of doing so, the awareness of using a set sepsis bundle is relevant.

**LEVEL OF EVIDENCE / DECISION FOR USE:**
- **X Background**  **Consider Replication**  **Ready for use**

- **Level of Evidence:**
  - Ia  Evidence obtained from meta-analysis of randomized controlled trials
Ib  Evidence obtained from at least one RCT
IIa  Evidence obtained from at least one well-designed controlled study without randomization
IIb  Evidence obtained from at least one other type of well-designed quasi-experimental study
X III  Well-designed non-experimental studies
IV   Expert committee reports, opinions of experts