EMS-ED handoff: Can team-based reporting improve markers of clinical efficiency in an adult emergency room?

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INTRODUCTION

- **EMS** gives report to **ED** staff after transporting patients to the ED
- During **EMS-ED handoff**, 91% of paramedics give patient report ≥ 2 times[1]
  - Fragmented communication → critical information loss +/- delays in care
- **Standardized communication tools** *increase* clarity and clinical efficiency (CE)
  - Improved CE associated with decreased length-of-stay (LOS) and patient mortality
  - Time-to-first labs is an established surrogate for CE
- We used **time-to-first labs** to evaluate how a standardized EMS-ED handoff protocol affects CE markers in the Adult ED
  - UF Health Adult ED uses an *asynchronous*, opportunity-based reporting (OBR) protocol for EMS-ED handoffs
  - We trialed a **"swarming"** *synchronous*, team-based reporting (TBR) protocol

METHODS

- ***Type*:** Quality improvement project (QIP)
- ***Setting***: Adult ED
- ***Design:*** Four Plan-Do-Study-Act (PDSA) Cycles
  - 2-week control (asynchronous OBR)
  - 2-week intervention (synchronous TBR)
- ***Sample:***
  - Control: n = 99
  - Intervention: n = 37
- **Goal:** Improve CE markers by 20%

METHODS

- ***Predictor variables***
  - **Asynchronous OBR protocol**

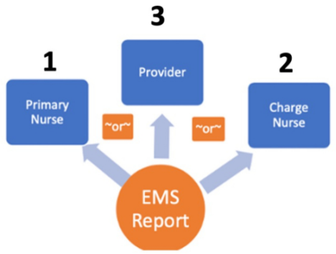

Figure 1. Control: Asynchronous opportunity-based reporting (OBR) protocol

  - **Synchronous TBR protocol**

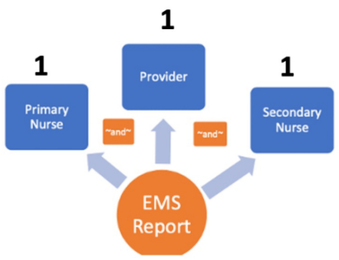

Figure 2. Intervention: Synchronous, team-based reporting (TBR) protocol

- ***Outcome variables (CE markers):***
  - Time-to-provider assigned to patient
  - Time-to-CBC ordered
  - Time-to-CBC collection
  - Time-to-CBC resulted
  - Time-to-disposition
- ***Analysis***
  - Start time for all encounters was based on when the patient was physically roomed
  - Simple descriptive statistics of pre- and post-intervention CE markers (mean, standard deviation)

RESULTS

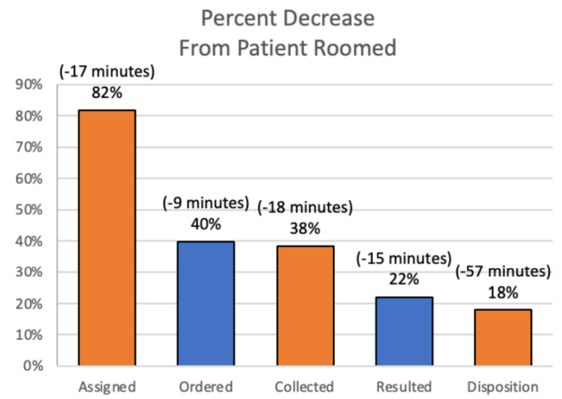

Figure 3. Barplot demonstrating % decrease in time for CE markers from pre-(OBR) and post-(TBR) intervention.

Table 1: Average Time (min)			
Roomed-to-action	Pre (n=99)	Post (n=37)	Delta
Patient assigned	21.3	3.9	-17.4 (-82%)
CBC ordered	23.5	14.1	-9.4 (-40%)
CBC collection	47.8	29.5	-18.3 (-38%)
CBC resulted	85.2	69.9	-15.3 (-22%)
Patient disposition	340.5	283.0	-57.5 (-18%)

Table 1. Comparison of mean time changes in minutes between pre- and post-intervention.

RESULTS

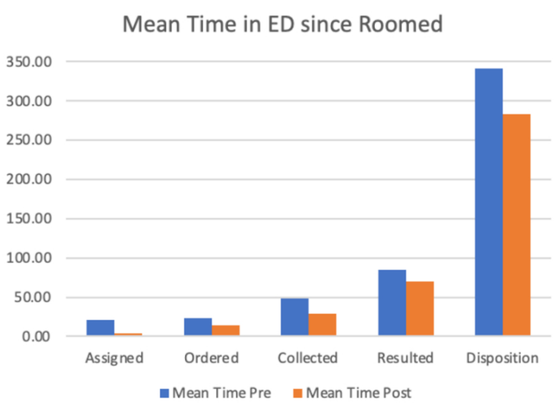

Figure 4. Barplot comparison of mean time for CE markers between pre- and post-intervention.

CONCLUSION

- **Synchronous team-based reporting** during EMS-ED handoff is associated with a **18% increase (-57.5 minutes) in clinical efficiency**
- **Next step:** Expand to entire department and evaluate at scale

REFERENCES

- Dawson et al (2013) doi:10.1111/1742-6723.12120

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