Members of the Sickle Cell Disease Program were awarded a Quality and Patient Safety award for their quality improvement project of *Improving the Care for Adults of Vaso-Occlusive Episodes in the Emergency Department.*

(Pictured) Cristopher Amanti, MD, Emergency Medicine; Evan Berg, MD, Emergency Medicine; Elizabeth Klings, MD, Pulmonary and Director for the Sickle Cell Disease program; Kate Walsh, CEO; Anna Allen, research assistant, Pediatrics; and Stanley Hochberg, Sr. VP for Quality, Safety and Technology and CQO. (Missing from photo is Patricia Kavanagh, MD, Pediatrics.)

Improving the Care of Vaso-Occlusive Episodes in the Adult Emergency Department

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BOSTON UNIVERSITY SCHOOL of Medicine
CENTER OF EXCELLENCE IN SICKLE CELL DISEASE
BOSTON MEDICAL CENTER EXCEPTIONAL CARE. WITHOUT EXCEPTION.

BACKGROUND

- Vaso-occlusive episodes (VOE) is the most common reason adults with sickle cell disease (SCD) seek care in the Emergency Department (ED)
- Providing timely treatment for acute VOE in the ED setting is challenging, as 1st parenteral dose should be given within 1 hour of arrival and subsequent doses every 15-30 minutes
  - Tanabe et al. Ann Emerg Med 2012;19(4):430-438.
  - Yawn et al. JAMA 2014;312(10):1033-1048.

OBJECTIVE

- To improve care for VOE, based on national guidelines:
  - Triage acute VOE as emergency severity index (ESI) 2
  - Provide 1st parenteral (IV/IM) opioid within 60 mins of arrival
  - Provide 2nd parenteral (IV/IM) opioid within 30 mins of 1st dose
  - Initiate PCA in the ED for those requiring admission

METHODS

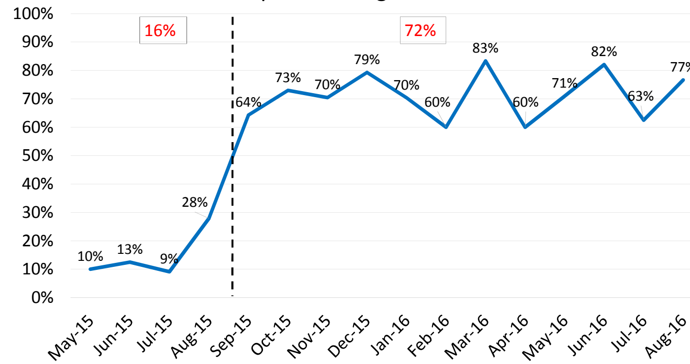
- Setting: Adult level 1 trauma center with 120,000 visits annually within an academic, urban, safety-net hospital.
  - 200 adults with SCD receive care at BMC Adult Hematology
- Study Sample:
  - Uncomplicated vaso-occlusive pain episodes
    - Exclusion dx: Fevers, ACS, atypical chest pain, priapism, abdominal pain, headache, severe anemia, DVT/PE
  - Moderate or severe pain (≥5 of 10 on Numeric Rating Scale)
  - Received 2+ doses of parenteral opioids (IV or IM)
- Interventions:
  - Timeline: Baseline—May-Aug 2015; Intervention—Sept-Aug 2016
  - Multidisciplinary team: MD (ED and hematology), RN, pharmacy, data analyst
  - Standardized algorithm
    - ESI=2 at triage
    - 1st parenteral opioid dose given within 60 minutes of arrival
    - Total of 3 doses of opioids given every 30 minutes
    - Start PCA for admitted patients
  - Individualized care plans: Brief clinical snapshot and doses for opioids, including PCA settings
  - Education for all ED staff
    - QI lead met with RN staff in Oct 2015 & Feb 2016
    - Email communication with residents & attendings
  - EPIC Order set: Can order 1st parenteral dose + 2 additional doses prn

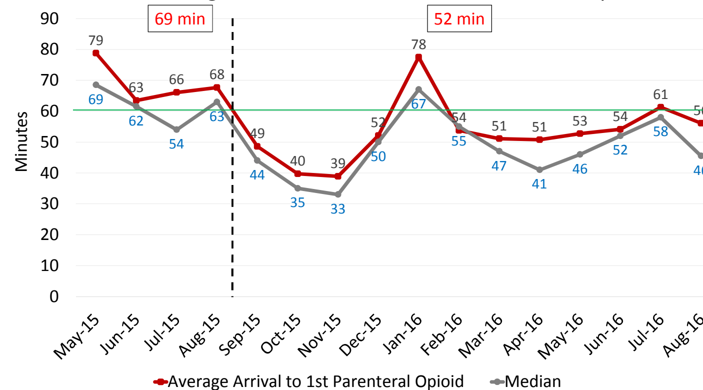
RESULTS

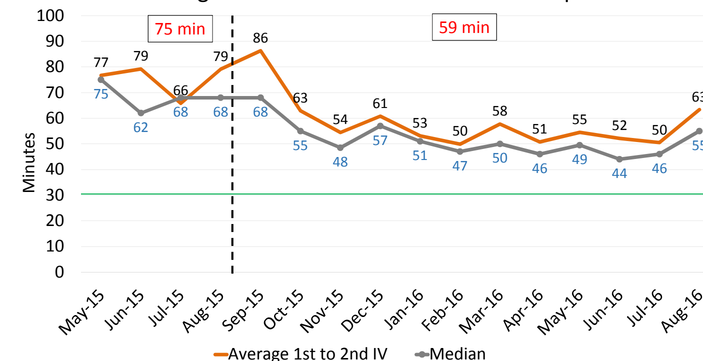
Item	n=130 subjects
Age, yr; average (SD)	29 (12)
Female, # (%)	66 (51%)
Hb SS genotype, # (%)	78 (60%)
# ED visits for VOE, median (range)*	2 (1-44)

* among those with an ED visit; 30% adults with SCD not seen in ED during this time

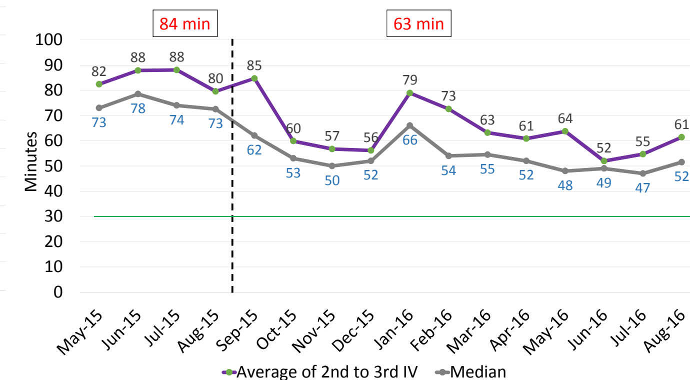
RESULTS (Continued)

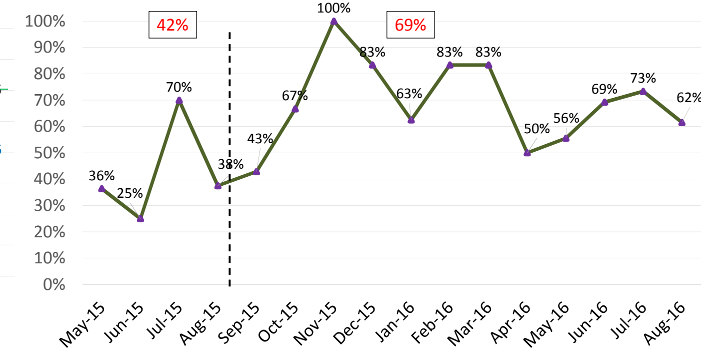






RESULTS (Continued)





SUMMARY

- Time to first pain medication met guidelines of 60 minutes, times to subsequent doses (medians) trending towards goal of 30 minutes
- No change seen in proportion discharged

LIMITATIONS

- Process measures; need to collect data on outcomes such as patient satisfaction, 30 day readmission rates

CONCLUSIONS

- Proof that one of the busiest EDs in the country can provide high quality care for VOE by using an algorithm & individualized care plans

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