



Cutting our LOSses: Hospitalist and Emergency Medicine multidisciplinary partnership to improve ED throughput

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DukeMedicine



No disclosures



Background

- Input
 - Patient volumes (ambulance/walk in), SOI/ acuity, inappropriate use
- Throughput
 - Delays in testing, Consultative delays, RN/MD staffing
- Output
 - Hospital bed capacity, Hospital discharge efficiency, Hospital room TAT



Background

- Outcomes of ED congestion
 - Increased LWBS
 - Care delay
 - Ambulance diversion
 - Mortality
 - Decreased patient experience
 - Decreased revenue



Background





Background

- Duke Regional Hospital
 - Community hospital within our academic health system
 - 64,000 visit/year
 - Tertiary care
 - In months prior to our project LWBS 10.1-11.6% and ED LOS 509 minutes





Purpose

- To determine the change in ED LOS for patients admitted to the medicine inpatient service after implementation of innovations developed through a collaborative quality improvement project involving hospitalists, ED physicians, and nursing.

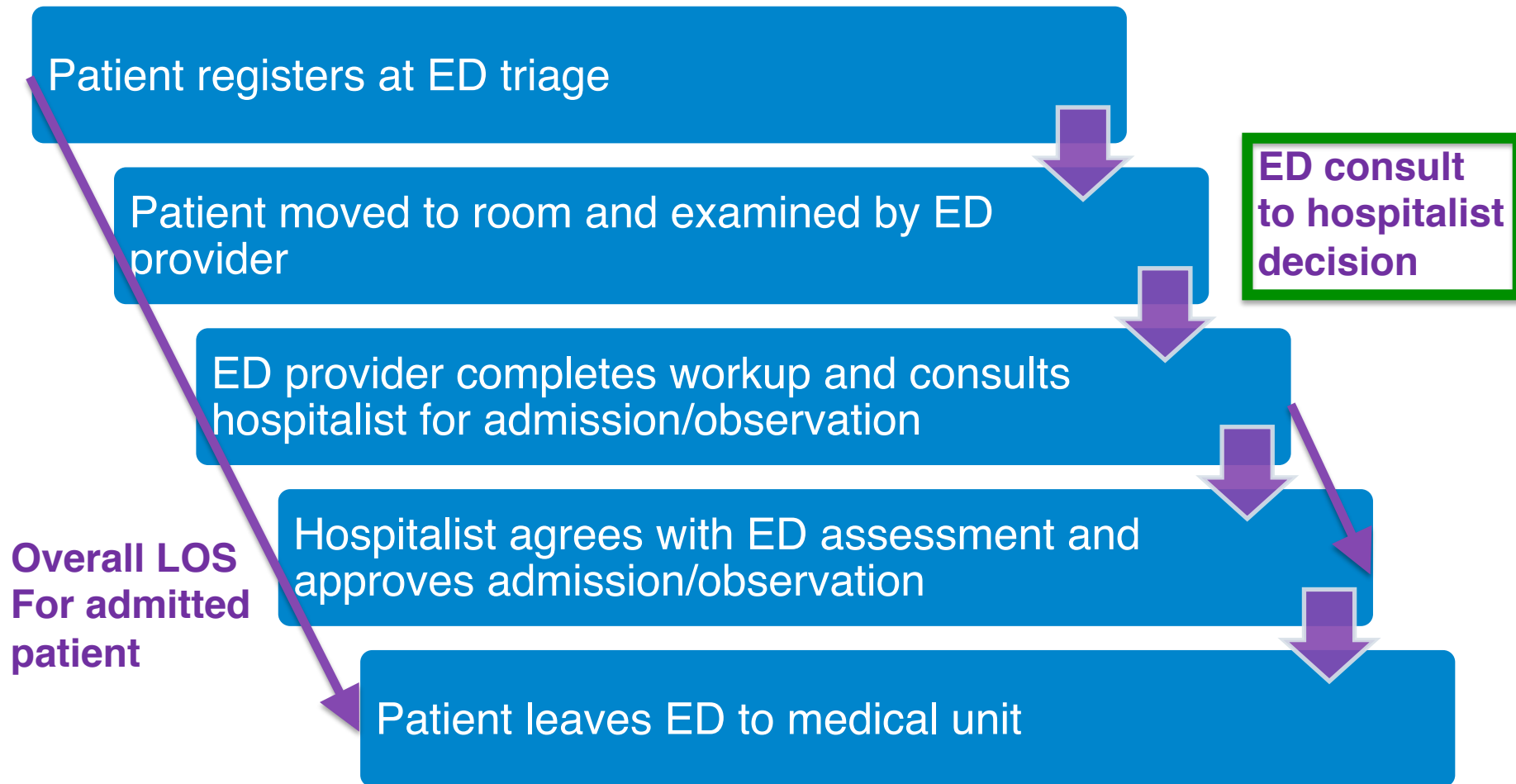


QI Process

- Multidisciplinary team and QI processes
 - ED concerns: High LWBS, throughput issues, patient experience
 - Hospitalist concerns: Incomplete ED assessment and workup, increased admissions volume, decreased efficiencies seeing admissions outside ED
 - Nursing concerns: Patient arriving without orders, nursing assessment process
 - Institutional/administrative support high



ED throughput for admitted patients





Interventions

- Transition Orderset: (Skeleton orders, bridging orders, holding orders, etc)
- Ongoing education: hospitalists, ED providers, residents, and nursing.
 - Imperatives, Interventions, metrics
- Hospitalist incentive plan: hospitalist physicians and leadership.



Transition order sets

- Hospitalists not ED providers
- Admit status, diagnosis, bed type, VS frequencies, notify provider triggers, diet, activity, and initial nurse care instructions
- Does not include: Medications, drips, diagnostic testing orders etc
- Not replacement for full ordersets expected within 3 hours of arrival to unit)
- Allow quick entry in EHR
- Start the bed placement process
- Reflect the first few hours of care
- Exclusion criteria



Transition order sets

▼ GEN Medicine Transition Manage My Version ▼ — Required

Add Order

* Medicine Transition Orderset can be used to provide initial nursing care instructions for patients while admitting provider is in process of making assessment and recommendations.

* This is **not meant to replace completion of a full admission orderset by the admitting provider** through orders reconciliation process in Admission Navigator.

* Key orders (Code Status, VTE prophylaxis) and Clinical Decision Support are included in those full admission ordersets.

▼ General — Required

▼ Admission — Required

Admit to Inpatient

Place in Observation

Place in Observation in the CDU

DRH CLINICAL DECISION UNIT

Assign as Outpatient

▼ Vital Signs

Vital Signs

Routine, Per unit routine starting Today at 1514 Until Specified



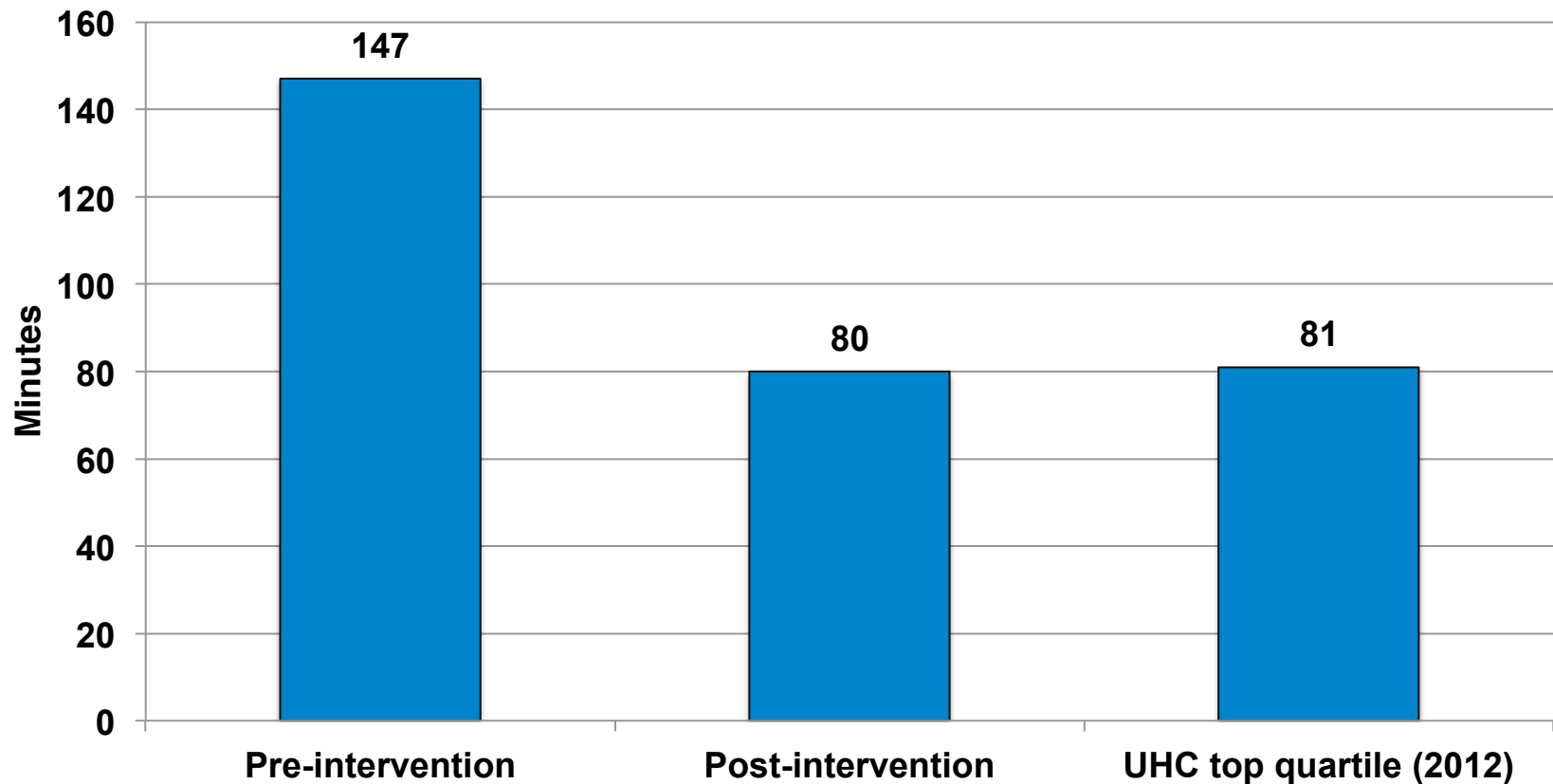
Study details

- Study design: Traditional QI Pre/post intervention 4 months in each period; “Pre” 3/14-6/14, “Post” 7/14-10/14
- 3400 patient admissions or observations in each period
- Interventions timed to start 7/1/14
- Timestamps and intervals determined from EHR
- IRB reviewed/exempt



Outcomes

Median time (minutes) ED Consult to Hospitalist decision

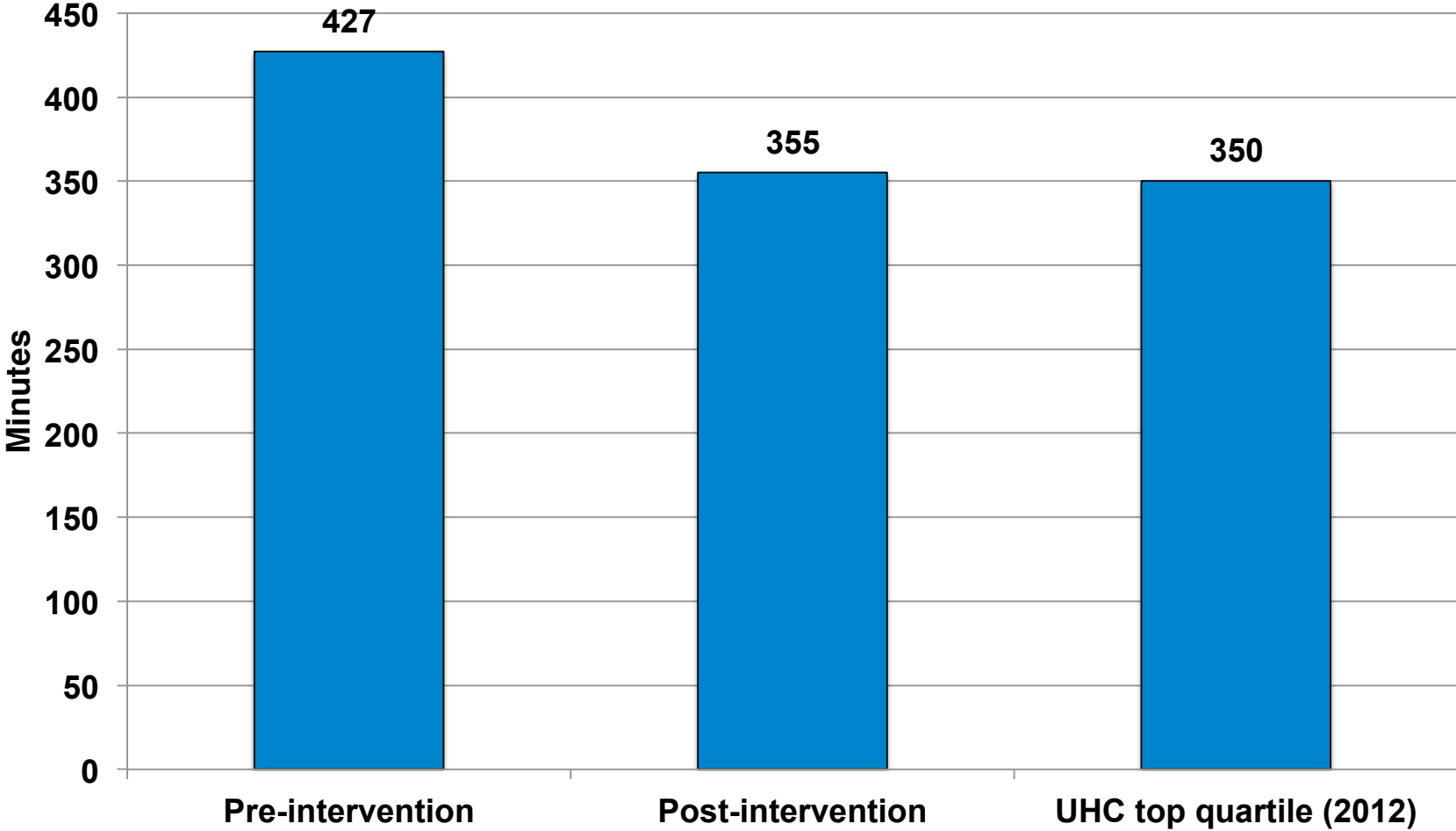


P-value < .001



Outcomes

Median time (Minutes) Hospitalist ED LOS

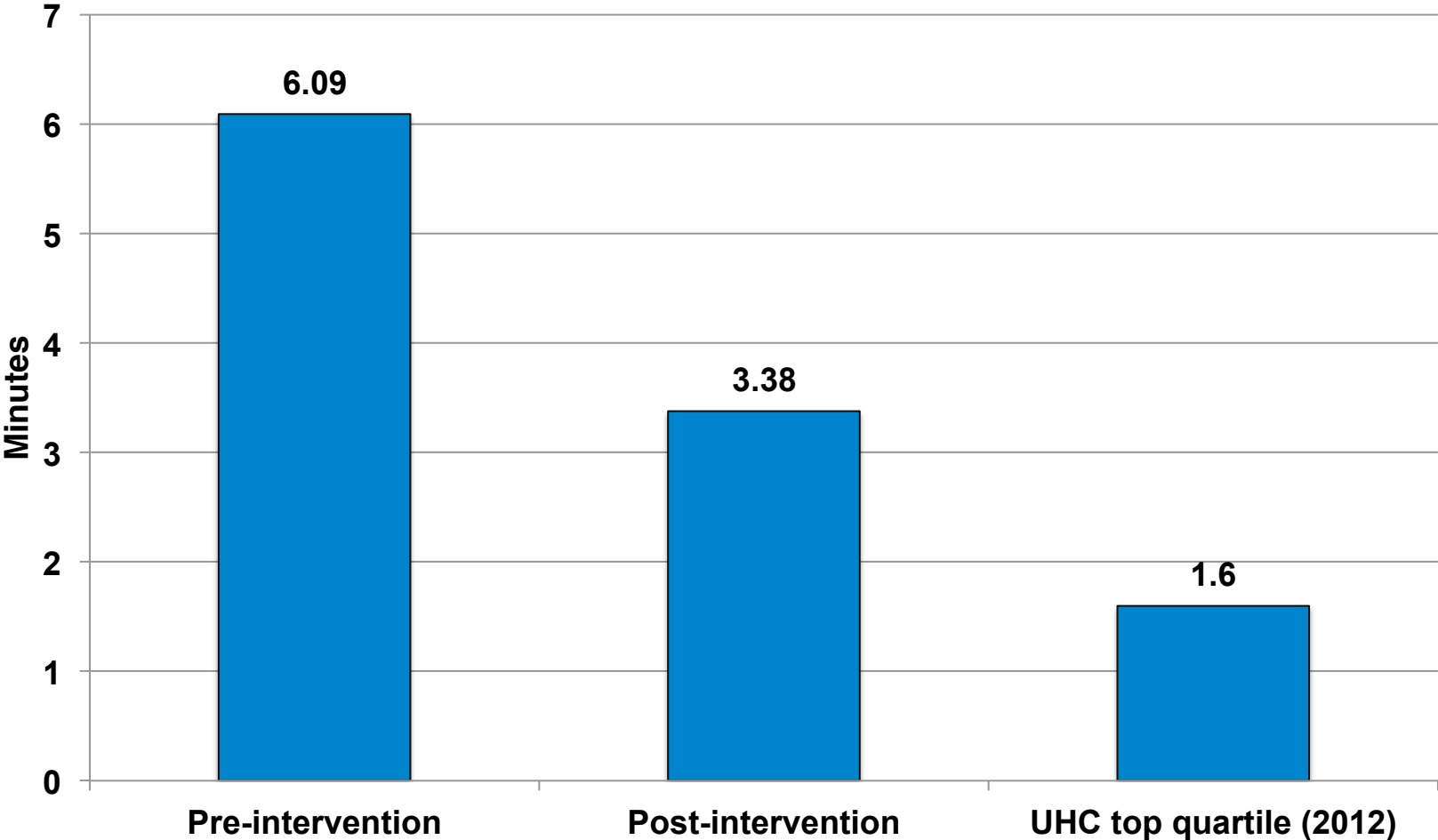


P-value < 0.001



Outcomes

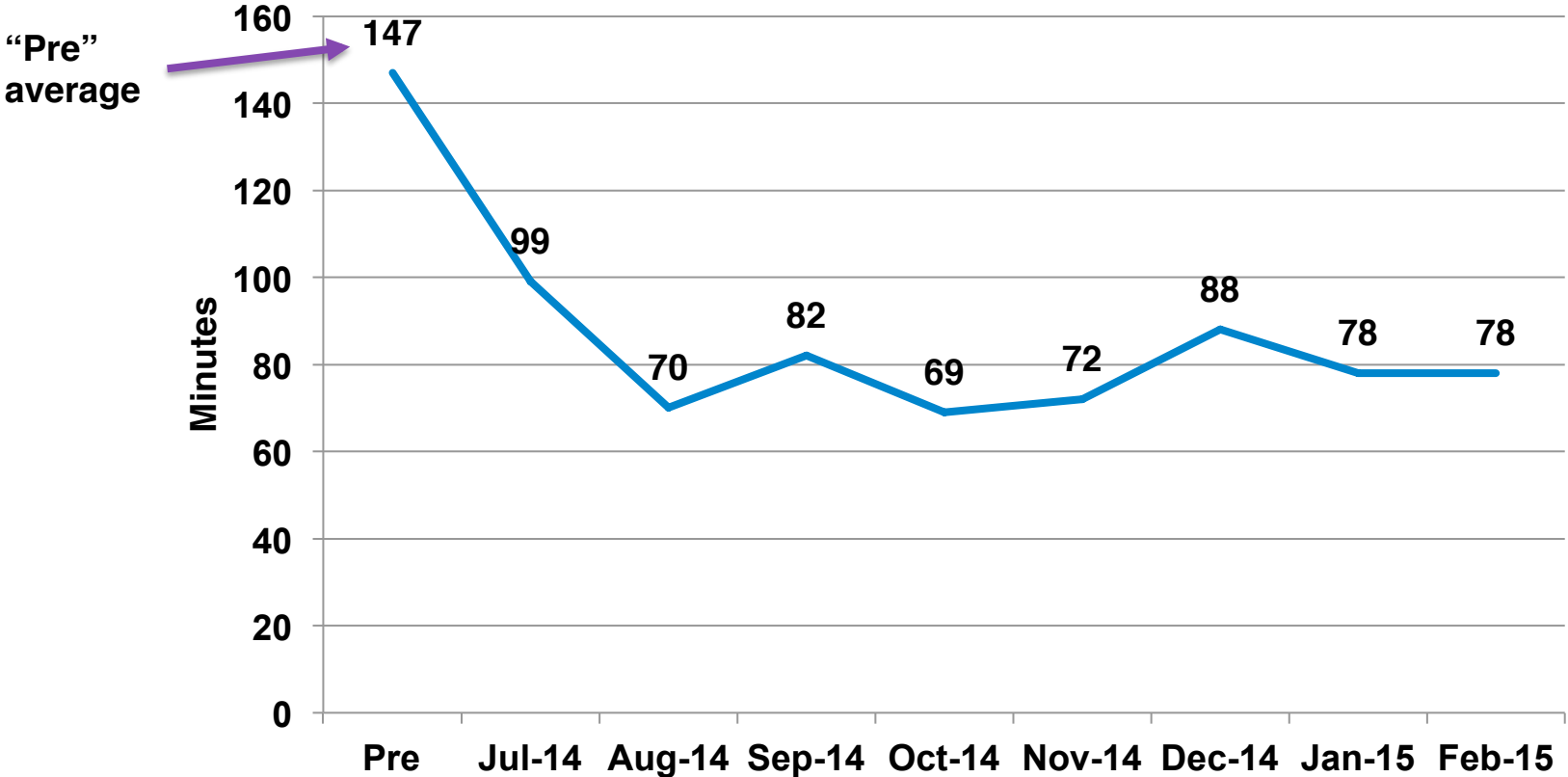
Left without being seen (LWBS) % for ED





Outcomes

Median time (minutes) ED Consult to Hospitalist decision





Outcomes

- Improved collaboration with ED
 - Partnership in reviewing admissions for appropriateness
 - Willingness to partner on interfacility transfers
 - Collegial atmosphere
- ROI for health system in investing in hospital medicine



Limitations/Confounding variables

- EPIC go live same time could have affected pre data but balanced by knowing our historical baseline was similar
- Went live with CDU
- “Pull to fill” strategy in triage
- Lack of validated benchmarking data
- Seasonality



Next steps

- Increase Transition order set utilization
- Ongoing work at other 2 hospitals
- Encouraging other admitting specialties to incorporate same processes



Similar results

- Howell (Ann Intern Med 2008): Active bed management by hospitalist with ED initiating brief admitting orders decreased ED LOS 98 minutes (458-360)
- Patel (Acad Emer Med 2014): Focus on process after admission order decreased ED LOS 79 minutes
- Patterson (Ann Em Med 2007): Bridging orders dec. ED LOS 110 minutes (350-240)
- Amarasingham (Qual Saf Health Care 2010): Streamlining admission process and using transitional orders dec. ED boarding time 90 min (360-270)
- Geskey (J Emer Med 2013): Guideline for consult request dec consult time 21 minutes (121-100)
- Quinn (Am J Emer Med 2007): Rapid admission policy with prelim admitting orders decreased ED LOS 10 min



References

- American College Emergency Physicians “Writing Admission and Transition Orders – Policy Resource and Education Paper (PREP)”
- University Hospital Consortium “UHC Emergency Department Cycle Time 2012 Performance Opportunity Summary”
- Hoot “Systematic Review of Emergency Department Crowding: Causes, Effects, and Solutions” *Ann Emerg Med.* 2008;52:126-136
- Moskop “Emergency Department Crowding, Part 1 and 2” *Ann Emerg Med.* 2009; 53:605-611 & 612-617
- Howell “Active Bed Management by Hospitalists and Emergency Department Throughput” *Ann Intern Med.* 2008;149:804-810
- Patel “Reduction of Admit Wait Times: The Effect of Leadership-based Program” *Academic Emergency Medicine* 2014; 21:266–273
- Patterson “Bridging Orders and a Dedicated Admission Nurse Decreases Emergency Department Turnaround Times While Increasing Patient Satisfaction” *Annals of Emergency Medicine* Volume 50:3 pg 352-353 Sept 2007
- Geskey “Improved physician consult response times in an academic emergency department after implementation of an institutional guideline” *The Journal of Emergency Medicine*, Vol. 44, No. 5, pp. 999–1006, 2013
- Amarasingham “A rapid admission protocol to reduce emergency department boarding times” *Qual Saf Health Care* 2010;19:200e204.
- Quinn “Effects of implementing a rapid admission policy in the ED” *American Journal of Emergency Medicine* (2007) 25, 559–563



Thank you:

DRH/DUHS leadership/administration

DRH Hospitalists, ED providers, nurses

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Questions?