

569 Leveraging Open Data With Best Practices to Reduce Length of Stay

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Background: ED administrators seek to improve physician productivity without eroding quality. We explore whether blinded data versus open data on individual physicians' median length of stay (LOS) metrics can help improve physician productivity in the ED.

Methods: We leveraged a natural experiment that changed the way data on individual physicians' median LOS was provided at one of two EDs. This data was provided to ED physicians in the form of a ranked bar chart about the median ED LOS of their patients. Before the intervention, each physician was identified using a code number (blinded data). After the intervention, physicians at Treatment ED were identified using names (open data) while those at Control ED continued to be identified using code numbers. At Treatment ED, the disclosure of open data resulted in physicians asking their top-ranked colleagues to share best practices, and an opportunity to shadow or be shadowed by colleagues they could now identify as high-performing physicians. We used electronic health record data from February 2010 to February 2011 of all 109,976 patients of Emergency Severity Index levels 1-3 who presented to the two EDs. To test our hypotheses, we used log-linear regression models and a difference-in-differences approach with time fixed effects, physician fixed effects, and clustered standard errors.

Results: The transition from blinded data to open data was associated with a 10.7% decrease in physician processing time ($p < 0.01$), defined as the time from when the physician commences care to when the disposition order is signed. It also significantly reduced processing time variation across physicians. This change was associated with no significant reduction in clinical quality or patient satisfaction. Interviews with physicians suggested that the benefits stemmed from open data enabling physicians to identify top performers and to adopt their best practices around workflow. Key best practices included (a) ordering all necessary lab and radiology tests early in the care delivery process and at once, and (b) initiation of the discharge instructions and the encounter note as soon as possible after the initial patient evaluation.

Conclusions: Providing open data on median LOS paired with education on best practices may be an effective way to improve ED physician productivity by fostering the validation and adoption of strategies for improving the management of ED workflow.

570 The Low Acuity Tract: Innovative Approach to Evolving Your "Split Flow" Emergency Department Efficiency Model

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Background: The "split flow" is a recognized ED efficiency model to help drive flow in departments with long lengths of stay, high LWOBEs, and with opportunity for improvement for all acuity levels. A split flow model was implemented in our institution in 11/2013. Improvements were multifold, including LWOBE rate dropping from 3% to 0.7%. Due to multifold reasons, flow metrics worsened and the LWOBE rate increased to 4% by 1/2016

Objectives: (1)reduce LWOBE rate to < 2% (2)reduce door to doctor time (DTD) by 25%(3)reduce overall length of stay for discharged patients(T&R LOS) by 10%(4)increase Press Ganey likelihood to recommend (PG LTR) by 10%.

Methods: The setting is an academic, urban, 97K visit adult ED supporting a 4 year residency. A multidisciplinary group of frontline ED staff, PAs, nurses, and physicians participated in a 3 day LEAN Kaizen event. The event led to the creation of an ESI 4/5 low acuity tract (LAT) within the traditional split flow comprised of: attending, PA, runner tech, nurse, and scribe. The physician/scribe were co-located in the quick look area with the quick look nurse. The PA/clinical nurse were located in the "results waiting" area to complete patient care. The primary metrics maintained are: (1)avg. daily volume (ADV) (2)DTD (3)overall T&R LOS (4)LWOBE rates (5)PG LTR top box scores (6)avg. daily admitted holds (ADH). The LAT went live 8/2016, 16 hrs/day, 7 days/wk. Analysis was performed with the unpaired T-Test, significance $p < 0.05$.

Results: The ADV in 2015 was 257 vs 269 in 2016 and the ADH in 2015 were 18 vs. 23 in 2016, $p=0.0046$. The pre- and post-LAT implementation results are as follows. The avg. DTD reduced from 88 min to 63 min(28% reduction), $p=0.0036$. The overall T&R times reduced from 331 min to 301 min(9% reduction), $p=0.015$. The avg LWOBE rate reduced from 3.1% to 1.6%, $p=0.0033$. The PG LTR top box score increased from 52.5 to 59.3 (13%), $p=0.019$.

Conclusion: Despite increasing patient volume and admitted boarders, the introduction of a LAT into a traditional ED split flow model can improve the key performance indicators of ED care and efficiency.

571 Using Lean Methodology to Create a Care Pathway for Low Acuity Emergency Department Patients in a Safety Net Hospital

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Background: Reducing length of stay (LOS) is integral to improving ED patients' care experience and access. We report on the use of lean methodology to reduce LOS for low-acuity ED patients in an urban, safety-net, level-one trauma center.

Methods: In October 2015, Zuckerberg San Francisco General Hospital (ZSFG) ED initiated a process using lean tools to improve patient flow. A value stream mapping (VSM) workshop was conducted, which mapped the care process for an ED patient from arrival to discharge. At the time, the median LOS for a walk-in patient was 331 minutes. To reduce overall LOS, initial work focused on decreasing the LOS of the least sick patients, with emergency severity index (ESI) of 4 and 5, 30% of ED volume. A target LOS of 135 minutes for ESI 4/5 patients was established based on the VSM. Process improvement was initiated through multidisciplinary teamwork (including patients and frontline staff), creation and coaching of standard work, and implementing a daily management system. A fast track (FT) process to rapidly assess and treat ESI 4/5 patients was designed, tested and implemented during a two-week workshop in December 2015, followed by continuous improvement via plan-do-study-act cycles.

Results: FT implementation reduced LOS of ESI 4/5 patients from a fiscal year (FY) 13-14 baseline of 187 minutes to a FY15-16 level of 147 minutes, a 25% improvement. Concomitantly, the rate at which patients left the ED without being seen decreased from 8.3% to 5.9%, a 29% reduction representing 1,680 patients who received care, who otherwise might have left. Reduction of ESI 4/5 LOS contributed to a 32-minute reduction in overall discharged patient LOS in FY 15-16 compared to FY13-14, translating to a 1.76 million minute reduction in LOS over the year. In May 2016, the ED moved into a new building with a larger footprint and staffing shortages. By September, ESI 4/5 LOS increased to 181 minutes. By using lean tools to study the new environment, adjustments were made to "re-boot" FT. The initial 42 days following this "re-boot" had a median LOS of 143 minutes.