Emergency Departments (EDs) play a pivotal role in the delivery of emergent and urgent ambulatory patient care. EDs bridge the gap in care presented by the current healthcare system related to a decrease in primary care physicians and clinic appointments and higher rate of uninsured or underinsured patients (Schuur & Venkatesh, 2012). Stauber (2013) reported closure of 425 hospital based EDs nationwide, which is inversely proportionate to an 18.9 million increase in ED visits in the years 1996 to 2006, alongside a decrease in 198,000 inpatients beds. This increased input and decreased output poses a stagnation of patients being able to move out of the ED, leaving a majority of the EDs struggling with overcapacity. With more patients utilizing ED for their primary care needs, moving patients through complex levels of services can be challenging. Baylor St. Luke’s Medical Center (BSLMC) struggles with its bed flow capacity and management in the ED.

In 2006, the Institute of Medicine (IOM) published a report on the future of emergency care. Some of the challenges listed included, demand outpacing capacity, ED crowding, boarding, ambulance diversion, uncompensated care, inefficient use of resources, inadequate surge capacity, inadequate protection for staff, inadequate supply of on-call specialists, medical liability, fragmented systems, lack of performance measurement and accountability, and inadequate research funding and infrastructure (Bernstein et al., 2009; Institute of Medicine, 2006). These barriers had severe consequences on the clinical, quality, financial, and service outcomes on the patients and the institutions. The clinical and quality impact included delay in the provision of care and patients leaving the ED without receiving care. Decreased admissions from the ED and lost revenue associated with diversions and patients leaving the institutions without receiving care were some of the financial burdens associated with ineffective ED throughput. Service impact included low patient satisfaction scores and decreased utilization of other hospital services.

The Centers for Medicare and Medicaid Services (CMS) announced ED-related measures for Hospital Value-Based Purchasing (HVBP) in 2010. The measures were (1) Median time from door to diagnostic evaluation by a qualified professional; (2) Median time from ED arrival to ED departure for patients subsequently admitted to an inpatient setting; (3) Median time from disposition decision to admit to the time of transfer to an inpatient care setting; and (4) Median time from arrival to ED departure for patients discharged from the ED. CMS’s reimbursement based on the ED-related measures were effective starting 2014. Two percent reductions on reimbursement were at stake if metrics were not met.

At the commencement of the PIP, CHI Baylor St. Luke’s Medical Center’s (BSLMC) ED was faced with inefficient throughput process that placed the patients at safety risk, and the institution at risk for quality of care and financial loss. The metrics with the most opportunities to improve were (1) Median time from door to diagnostic evaluation by a qualified professional was 38 minutes as compared to 14 minutes (National Performance); (2) Median time from ED arrival to ED departure for admitted patients was 339 minutes as compared to 277 minutes (National Performance). (3) BSLMCs ED diversion rate for the six months prior to the PIP implementation were 15% (No national benchmark). (4) Monthly average of patients that left the ED without being seen was six patients (No national benchmark). One of the organization’s goals was to improve efficiency, and surpass internal and external metrics without incurring additional costs.

The goal of the PIP was to improve the ED throughput times, diversion rates, and the number of patients who leave without being seen by utilizing Rodger’s change management theory, and IOWA model’s framework and stay budget neutral. The relevant stakeholders formed a team and settled on these evidence based focused points, (1) Provide an evaluation area for the ED physicians to evaluate patients in the waiting room when needed, (2) Engage the ED physicians to promote the shift in culture of evaluating and treating patients in the waiting room when needed, (3) Utilize evidence based standing delegation orders in the waiting room to initiate evaluation of patient’s chief complaint, (4) Provide training for ED charge nurses to fulfill the role of patient flow coordinators in the waiting room, promoting communication and safety. (5) Engage the ancillary departments of laboratory and radiology to provide better efficiencies for patients in the ED by reducing the turnaround times on tests and procedures. Training, education, and communication were disseminated and the project initiated its six months pilot on August 1, 2013.

The project was successful in statistically decreasing the time intervals for (1) Median time from door to diagnostic evaluation by a qualified professional, \( p < 0.001 \); (2) BSLMCs ED diversion rate \( p < 0.005 \) (3) Patients that left the ED without being seen, \( p < 0.001 \); (4) Radiology and laboratory turnaround times, both at \( p < 0.001 \) levels. The project remained budget neutral, by not adding any additional resources or costs to the organization. The project failed to decrease the median time from ED arrival to ED departure for admitted patients, \( p > 0.05 \). Strategies that were successful included, interdisciplinary collaboration towards a common vision, formative evaluation for barriers presented during the course of the PIP, engagement and buy-in from all stakeholders, and an organizational goal to improve the stated benchmarks. Some of the barriers presented during the course of the PIP were, organizational change of St. Luke’s Episcopal Hospital System being bought out by Catholic Health Initiatives and Baylor Institute of Medicine, and its impact on the organization and, unseasonal influx of influenza patients and its encumbrances on hospital resources, patient volume, and length of stay in the hospital presenting a bottle neck for the ED patients awaiting inpatient beds.
Evaluation of this PIP lures the idea to dive deeper into the impact of ancillary department's productivity and efficiencies to the ED throughput. There were different models of care, such an ED based laboratory that was not contemplated during this PIP. The effects of housekeeping and staffing of all services, was not pursued during this project and could play a part in ED throughput. The PIP utilized the metrics as required by the CMS; it would have been beneficial to review all patients’ charts to fully understand the impact of each patient’s scenario and the barriers and facilitators of ED throughput at the organization. The PIP has managed to change the physician and nursing culture at the BSLMC ED, but needs constant vigilance and prioritization by ancillary and inpatient departments to promote ED throughput. The problem of ED crowding continues throughout the nation and needs translation of evidence based solutions into practice, and policy changes to increase access to care in the U.S.