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Data-driven process improvements in the emergency department

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The purpose of this presentation is to demonstrate the need for comprehensive data analysis of hospital operations in order to find both time-reducing and cost-saving process improvements. Using data provided by Huntsville Hospital's Emergency Department Information System, key areas of interest, such as length of stay and left without being seen patients, were examined with regards to patient type and disposition. Disposition to a standard hospital room is analyzed further by floor. In addition, length of stay was separated into value added and non-value added, or waste, events and each event was analyzed for waste reductions and process improvements. Each event was fitted to a statistics distribution and examined per time of day. An arrival rate per event was also calculated. The following recommended process changes for Huntsville Hospital's Emergency Department were made: (1) Optimize and expand Physician-In-Triage operations to take further advantage of the significant reductions in length of stay, (2) Increase the bed capacity utilization rate in the Observation Unit by shifting more of the patients requiring extended discharges and reducing the time spent in the Emergency Department before being moved to the ObservationUnit and (3) Set-up separate processes for handling expected admit and discharge patients to take advantage of the foresight available and enable earlier integration with hospital bed management to reduce ED bed hold time. Each recommendation demonstrates how a comprehensive analysis of data is imperative to identifying future process improvements.

Biography

Sheila R Dyas - BSME, MSE, MBA, Six Sigma Black Belt. Currently she is employed in Huntsville Hospital, an 881-bed, community-based, not-for-profit institution, as a Process Improvement Engineer for their 85-bed Emergency Department. Her research has included the creation of an Emergency Department Cost Model for estimating process improvement cost savings, design of a service industry value stream mapping approach and the data analysis presented herein.

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