Proceedings of the Annual General Donald R. Keith Memorial Conference
West Point, New York, USA
May 3, 2018
A Regional Conference of the Society for Industrial and Systems Engineering

United Health Services (UHS) Emergency Department Redesign

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Author's Note: The authors listed above include a team of Industrial and Systems Engineering undergraduate students at Binghamton University who are working in conjunction with the United Health Services (UHS) Wilson Hospital Process Improvement Team. The Binghamton University team would like to thank UHS for providing guidance throughout the duration of the project.

Abstract: The United Health Services (UHS) Wilson Emergency Department received feedback through patient surveys, wherein the chief complaints were privacy and waiting times. The goal was to develop an emergency department layout that enhances geriatric friendliness, staff communication, processes, and contains private rooms with cutting-edge technology. Principles of Systems Engineering, Six Sigma, and Lean were utilized. This included IDOV (Identify, Design, Optimize, Validate) to formulate a project plan, 5s (Sort, Set, Shine, Standardize, Sustain), and Quality Functional Deployment to develop a staff-friendly layout that considered the clients needs and customer defined characteristics. Benchmarking was utilized to understand the features of highly rated hospitals, and was similarly used for the business processes. Time studies were performed to acquire patient data for simulation. Lastly, an Arena computer model was developed to establish performance metrics and validate the new layout. The team's design improved patient privacy, patient wait times, staff satisfaction, and process flow.

Keywords: Emergency Department, Geriatric, Lean Tool, Benchmarking, Simulation

ISBN: 97819384961-2-7