



ACCESS AND EFFICIENCY CLUSTER

Optimizing Care Delivery with Minimal Disruption

PROJECT 05-05161.GIT-NEU

Value Proposition:

- Construct models for an improved care delivery process by using optimization and simulation tools
- Utilize medical simulators to validate recommendations and establish training and clinical guidelines for their adoption
- Improve health care utilization, improve quality care and treatment outcome for patients, and improve training and compliance of personnel

Description:

Increased length of stay (LOS) due to inefficient healthcare delivery systems and hospital acquired conditions (HACs) results in negative effects on health outcomes, patient satisfaction, health care utilization (waste), and institutional reputation. The study aims to reduce average LOS, for partnered hospital's surgery patients, through optimizing the care delivery process by utilizing systems analysis and medical and computer simulation, and process optimization. Researchers will explore the development and use of minimally disruptive optimization models to limit the amount of change from current practices or processes. The project brings together multidisciplinary researchers with complementary expertise in medical simulation, systems engineering simulation, surgical quality improvement, and organizational performance excellence, creating the opportunity to address safety, quality, patient-centered care, and efficiency from a whole system perspective.

How this is different than related research:

Studies have looked at different aspects of a care delivery process. However, this is a comprehensive study looking at all aspects that can be optimized in a system view, from improved scheduling to reduce HAC rates. As there are multiple causes at the root of the problem resulting in increased LOS, a comprehensive study must be used to achieve an optimized care delivery process. This work is also the first that links computer simulation with medical simulators. The study design aims not only at optimizing the system alone, but also in training the workforce to adapt effectively and successfully to these changes using medical simulators.



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