



University of Maryland Medical Center  
Emergency Department Operational Optimization

December 13, 2013

**CANNONDESIGN**





CannonDesign's team of over 500 healthcare professionals dedicated to clinically-driven strategic planning, operational optimization, experiential design and process improvement offer unparalleled, integrated solutions with a deep understanding of how healthcare is delivered in Maryland ... all under one roof.

WE LIVE  
EMERGENCY.



## EMERGENCY OPTIMIZATION STUDIES & OPERATIONS EXPERIENCE

Led by a board-certified academic emergency medicine physician internationally recognized for his expertise in process redesign and informed by healthcare's emerging realities, CannonDesign is driven to deliver innovative, cost-effective solutions that challenge traditional thinking. Focused on how UMMC needs to do things tomorrow, our approach is collaborative and interdisciplinary. Gone is the model of allowing data without context to drive critical decisions.





# WE KNOW MARYLAND.

95% of healthcare is local. We understand the unique regulatory and reimbursement environments in the State of Maryland and how these converge to impact how healthcare must be successfully delivered to the nearly 6 million people who call Maryland home. With this in mind, we have carefully selected a team that has experience working with hospitals in Maryland as well as with governmental agencies.







## MARYLAND HEALTHCARE

Ranking 44th in the nation with just 8.4 EDs per 1 million residents, Maryland's emergency care system is under stress. When combined with average inpatient occupancy rates of 75.1% for acute care hospitals, documented shortages of primary care and mental health providers, and a challenging reimbursement landscape, the headwinds facing Maryland EDs are formidable. CannonDesign's knowledge of Baltimore and the State of Maryland make us distinctly positioned to support UMMC in developing solutions that will drive value, and are realistic and implementable in Maryland's unique climate.



Tomorrow's emergency medicine begins with considering time, cost, and optimal patient experience.





# WE BREATHE OPERATIONS.



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For UMMC's Emergency Department to be successful in the future, you must blend strategic initiatives with operational opportunities and the network's mission and vision in order to clearly define how the ED must evolve to meet tomorrow's healthcare paradigm. All this must then guide the evolution of the ED to develop a long-term plan targeted to UMMC's performance goals and its role as a premier academic medical center and training site for future emergency physicians.





## Project Methodology



### PHASE 1: UNDERSTAND

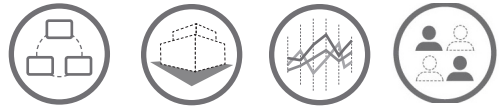
The Understand Phase begins with developing comprehensive knowledge of UMMC's adult emergency department. Our team of advanced healthcare analytics experts, in conjunction with our clinical, operations, experiential design and simulation modeling experts, will immediately begin collecting and reviewing existing information.

By the end of the Understand Phase our team will have comprehensive knowledge of the adult emergency department at UMMC. We will know what's working well and where opportunities exist for further refinement and improvement. We will understand how departments that interface with the emergency department impact its operations.

We also will have taken the opportunity to quantify the impact today's performance has on capacity, cost and other metrics of vital importance. To accomplish all of this, our team of global experts will engage in a variety of activities.



## Project Methodology



### PHASE 2: VISION

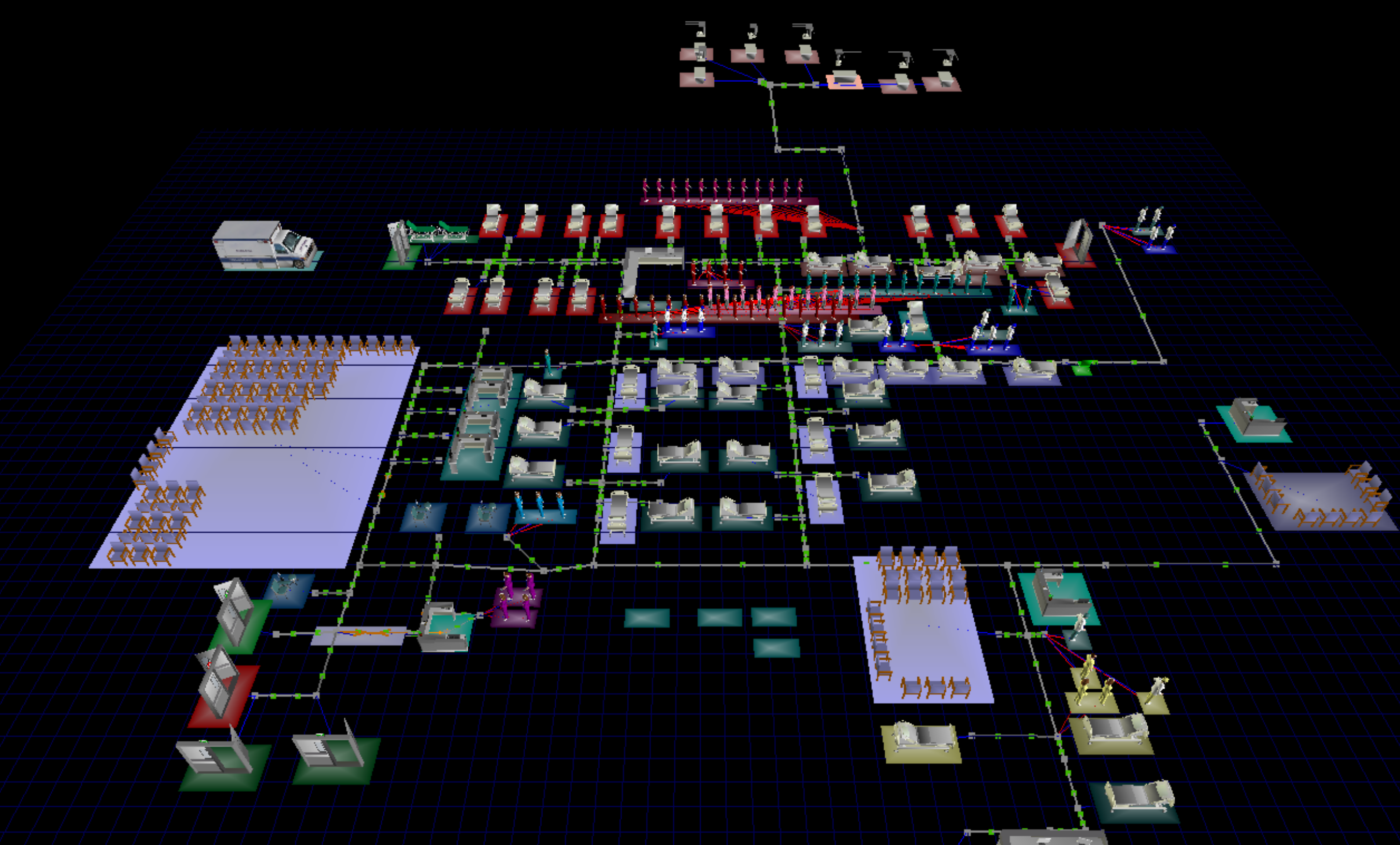
The potential to define an efficient and effective emergency department that incorporates innovative processes requires a focus on performance improvement and change management. During the Vision Phase, CannonDesign will utilize our proprietary Outcomes-Based Visioning™ sessions to challenge the stakeholders at UMMC to define where you are today, where you want to be and what it will take to get you there. The purpose of these visioning sessions will be to gain consensus on what success might look like in the future and use this information to guide the innovation that will follow.

Cannon Design will work with UMMC's Special Steering Committee to schedule sessions with the appropriate multidisciplinary teams who will be engaged in implementation of the accepted recommendations moving forward. Our experience with organizations globally has proven that the most successful groups include a variety of staff from all levels of the organization.

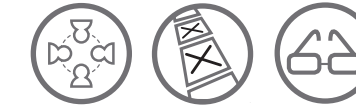
The sessions will outline the performance and growth outcomes in key areas including, but not limited to: patient experience, throughput, staff productivity, and patient and staff satisfaction. The visioning sessions will also be used to push thinking related to care model innovation, LEAN practice and the future of healthcare. The Outcomes-Based Visioning™ methodology will yield a future vision based on a structured and cumulative process.







## Project Methodology



### PHASE 3: EVALUATE (OPTIONAL)

Simulation modeling is a powerful decision support tool that will guide UMMC through a process of clearly understanding the key interplays of the complex systems found in the adult emergency department. It is also a valuable tool to understand how decisions will have a combined impact on operations, patient experience and efficiency.

The value of simulation modeling is rooted in its ability to objectively evaluate and illustrate the complex interplay between seemingly unrelated systems and processes. Once validated as an accurate model, the simulation model also becomes a powerful tool to assess proposed innovations before investing scarce resources in implementing solutions that will yield marginal, if any, improvement. The model also delivers valuable information to explore queuing theory to understand how improving processes in one area will impact other parts of the system.

While simulation modeling requires an investment in time and resources to develop, every organization that has leveraged simulation modeling has found the return on investment to be in orders of magnitude.



## Project Methodology



### PHASE 4: EXECUTE

During the Execute Phase, CannonDesign will support implementation of performance innovations identified in the Understand Phase and addressed in the Vision Phase and an optional Evaluate Phase. During this process, CannonDesign will remain laser-focused on ensuring that innovation implementation respects the objectives of the University of Maryland Medical Center.











CannonDesign's Dr. Manuel Hernandez is a board-certified Emergency Medicine physician and an Assistant Professor of Emergency Medicine at the University of Florida College of Medicine at Jacksonville. In this role he continues to provide direct patient care to patients at Northeastern Florida's busiest emergency department and Level I adult and pediatric trauma center. He provides clinical coverage in the main emergency department, trauma receiving area and clinical decision unit. Dr. Hernandez is also responsible for supporting resident and medical student supervision at the bedside and provides didactic educational programming.



# WE ARE ACADEMICS.

- Recent CannonDesign academic medical center projects include:
- Penn State Milton S. Hershey Medical Center
  - Truman Medical Centers
  - Advocate Christ Medical Center
  - Froedtert & The Medical College of Wisconsin
  - University of Minnesota Medical Center
  - University of Pennsylvania Medical Center
  - City of Hope National Medical Center
  - Hamad Medical Center (Qatar)
  - Victoria General Hospital (Canada)
  - Virginia Commonwealth University Medical Center



Academic Reviews

## CLINICAL & ACADEMIC PRODUCTIVITY

Academic medical centers are unique institutions. The intersect of patient care, research and clinical education make for an environment unlike that seen in community hospitals. Our approach to partnership with academic medical centers is rooted in an understanding of these differences and the development of performance benchmarks and best practices that strike the right balance, delivering solutions that are realistic to the academic environment.

Our approach is designed to integrate seamlessly with the proposed academic review, yielding a comprehensive understanding of clinical operations, academic productivity and the challenges of functioning as an urban ED.

