Hospital of the Future
Snapshots of Success

MAKING HOSPITALS FUNDAMENTALLY MORE EFFICIENT — BY DESIGN

A discipline within GE Healthcare’s Performance Solutions, the Hospital of the Future solution provides the expertise and proprietary simulation technology that enables organizations to realize a fundamentally more efficient system — physical layout, workflows, staffing model, and patient experience — by design. This dynamic approach to planning, developing, and designing an infrastructure — whether building a new facility or renovating an existing space — achieves a more efficient next-generation organization that achieves performance goals.

The following client examples showcase GE Healthcare’s dynamic work in care design. These clients range in size from academic medical centers to health systems to independent community hospitals.

JFK Health System — Edison, N.J.

Goal: Evaluate the tolerances of a proposed design for JFK’s new 60,000 sq. ft. emergency department prior to construction to determine whether the new environment of physical space, staffing and workflow could handle JFK’s current ED operations as well as its growth projections.

Methodology: The Care Design team within GE Healthcare Performance Solutions used clinical expertise, data gathering, and sophisticated proprietary simulation technology to model JFK’s current and projected ED operations and volume within the new environment. The simulation process helped JFK quantify how different inputs—staffing models, workflow patterns, technologies—would affect capacity utilization, staff productivity, and care efficiency.

Results: Based on the results, JFK Medical Center was able to:
• Validate the core workflow functionality of the new space
• Identify a construction savings opportunity of $1.48 million
• Consider process, technology, and staffing changes that would enable 25% volume growth while potentially saving $2 million in annual staffing costs
Gundersen Lutheran Health System — La Crosse, Wis.

**Goal:** Design a new critical care hospital that would improve the patient experience while making optimal use of nursing resources.

**Methodology:** With the assistance of the Care Design team from GE Healthcare Performance Solutions, Gundersen combined workflow optimization, simulation modeling and facility design to develop a new care space that would truly meet its goals for quality and cost control. Using GE methodology, they were able to identify process improvement opportunities, design a range of solutions, and test alternative scenarios—before the blueprint stage.

**Results:** Using the information gained through workflow simulation, Gundersen arrived at a building layout and workflow design that enabled the organization to:
- Reduce waste in nursing workflow, cutting unnecessary travel time by more than 40%
- Increase overall efficiency and integrate enterprisewide process improvements that saved millions of dollars even before the new facility opened

“You get an objective, third-party look at your processes, and you end up with data to help you make fact-based decisions.”

Jeff Rich, Executive Director of Major Projects and Efficiency Improvement, Gundersen Lutheran Health System

Virtua Voorhees Hospital — Marlton, N.J.

**Goal:** Design a new hospital that would transform the patient experience and ensure the best possible outcomes using next-generation technologies and processes.

**Methodology:** During the research-based design process, Care Design experts from GE Healthcare Performance Solutions assisted with current-state process mapping to identify potential care delivery problems, such as excessive staff and patient movement, long wait times, and underused equipment. Their recommendations contributed to a more effective building design with resource adjacencies that promoted better staff and patient flow.

**Results:** The rigorous pre-build scrutiny enabled Virtua Voorhees to:
- Lean out care delivery processes and significantly improve clinical workflow, resulting in $7 million in cost avoidance
- Create a care environment that frees up clinician time for more direct patient care—a key factor in delivering world-class outcomes and improving patient and staff satisfaction
- Build a facility that will stand the test of time by accommodating future technologies and processes

“The tools and methods that GE provided set us on the road to a truly optimum facility design.”

Richard P. Miller, FACHE, Chief Executive Officer — Virtua
New Medicine/Telemetry Unit

**Goal:** Develop a workflow layout for the Medicine and Telemetry units in HRRH’s proposed new hospital that would reduce waste (non-value-add activities) and increase clinician productivity.

**Methodology:** The Care Design team from GE Healthcare Performance Solutions performed a detailed clinical workflow redesign of the units using Lean methodologies and proprietary simulation technology. This enabled HRRH to evaluate the impact of changes to clinical workflows, layouts, demand patterns, technologies, and available capacity before committing to a new design.

**Results:** The proposed layout enabled HRRH to:
- Improve nursing productivity by reducing travel time by 20%
- Enhance the patient experience by reducing care activity delays by 30%
- Make workflow improvements in HRRH’s existing facilities

"We chose to work with GE Healthcare because of its proven expertise in Lean methodologies, simulation technologies, and deep-rooted understanding of healthcare."

Barb Collins, Chief Operating Officer
Humber River Regional Hospital

New Emergency Department

**Goal:** Design a larger but more efficient ED that would enable HRRH to accommodate 30% projected growth in patient volume while reducing length of stay (LOS).

**Methodology:** Planning to build a new ED with triple the floor space of its existing operations, HRRH wanted to optimize ED workflow prior to committing to a new design. The Care Design team helped HRRH identify current ED activities that did not provide value to patients, and, with the use of computer simulation modeling — create and evaluate new facility layouts and processes that would eliminate waste and enable more efficient, patient-centered care.

**Results:** The simulations uncovered challenges in the existing plans that would lead to increased patient LOS in the new ED. The optimal ED layout and improved processes that emerged from future-state scenario testing enabled HRRH to:
- Reduce patient LOS in the new ED by 35 to 62%
- Free up more than 7,000 square feet of ED space for future expansion
Transform your care delivery, optimize your future

The Care Design — Hospital of the Future discipline of GE Healthcare Performance Solutions provides the expertise and simulation modeling tools that enable you to transform care delivery by design. We help you optimize all critical factors — operational processes, staffing models, technology deployment, and building design — so they work together synergistically to achieve your clinical and financial goals.

As a result, you can move forward with greater confidence that your new space will:
• Align clinical care through analysis and expertise to achieve efficiency for care delivery, capacity utilization, and staffing
• Function as well in reality as you envision via simulation technology
• Accommodate projected growth and future delivery patterns, as well as current workflows
• Make the best use of your capital dollars, while helping you control operating costs

To learn more, please contact your GE Healthcare Performance Solutions representative or visit performancesolutions.gehealthcare.com/hof.