

Transforming Care: The Jersey Shore Hospital

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When the 300 million dollar expansion and renovation of Meridian Health's Jersey Shore University Medical Center was designed more than five years ago, the architects, administrators, physicians and staff envisioned a project that would dramatically change the delivery of health care to the community that the hospital has served for more than 100 years. *Transforming Care: The New Jersey Shore* was conceived to create a patient and staff experience second-to-none, and to ensure that the rapidly growing needs of the community were met for generations to come. With completion of this enormous project in sight, community and staff excitement is building, and expectations are high that the new and improved environment will assist staff in doing what they do best---deliver excellent health care to their patients.

Jersey Shore's *Transforming Care* expansion will combine a healing environment for patients with advanced medicine and technology. The new construction was conceived using evidence-based design elements to maximize the delivery of patient-centered care. The project includes construction of a new emergency department that is equipped to handle more than 100,000 patients annually; a trauma center, including dedicated space for pediatrics; and ED capacity to perform full body imaging in less than two minutes. Six spacious operating room suites with the latest surgical technologies were added, and a preanesthesia holding area boasts a high-tech TV entertainment system and individual bays for patient privacy. In addition, the postanesthesia area was expanded from 13 to 18 recovery bays and redesigned into a more open environment that allows easier observation of patients by staff.

An impressive 3-story glass-roofed atrium lobby will change the traffic flow for the entire medical center, providing a stunning new entrance to the hospital. Six state-of-the-art operating room suites with enhanced patient care areas have been completed in the

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new diagnostic and treatment building. To ease access for patients and families, a new parking garage with a rooftop heliport, dedicated ambulance access, and a direct connection to the atrium lobby and patient care areas was designed and recently opened.

A central feature of the project is the new inpatient area of the Northwest Pavilion, featuring three 36-bed units containing all private rooms, with an additional 36-bed shell for future expansion. The patient experience will be enhanced in this environment with the inclusion of 24-hour room service; use of soothing colors, fabrics, and presence of roof landscaping to create a healing environment; use of natural light in each room; provision of a “family space” in each room; use of carpeting and other measures to decrease noise; increased visibility of patients by staff; and a bathroom configuration allowing easier patient use of toileting/shower facilities.

The Northwest Pavilion was designed by WHR Architects in consultation with Jersey Shore administrators and staff. The result of this consultation was a unique nursing unit configuration that will support Jersey Shore’s innovative nursing practice model that promotes collaborative, competent, effective patient care. Each 36-bed unit is further subdivided into three self-sufficient 12-bed “neighborhoods,” each designed for “controlled decentralization,” maximizing nurse staffing, teamwork and collaboration. Each of the 12-bed neighborhoods consists of a circular nursing station that splits the central hallway into two; on each side of the station in either hallway are six private patient rooms. Four decentralized work areas (two on each side of the station) are located directly outside patient rooms for charting and consultation, minimizing walking distances and enhancing staff visibility of patients and families. Each neighborhood also has its own supply closets, areas for clean and soiled linen, and staff break areas.

Although the broad concept of nursing unit decentralization is not new, its implementation and outcomes, especially as configured for the *Transforming Care* project, has not been well studied. In particular, the impact of such a “neighborhood” design on staff communication patterns and their resultant patient outcomes, has yet to be explored. To fill this gap in knowledge, the Pebble Research Team, which consists of Dr. Teri Wurmser, the Director of the Meridian Health (MH) Ann May Center; Drs. Jane Bliss-Holtz and Christine Hedges, Nurse Researchers at the Center; Kathryn Collins, the VP of Jersey Shore Campus Planning and Construction Management; and Dr. Richard

Hader, Meridian Health SVP/CNO, was joined by Drs. Franklin Becker and Ying Hua from the Department of Design & Environmental Analysis, College of Human Ecology, Cornell University. This research group currently is addressing how the physical design of nursing units influences effective communication and collaboration in the interdisciplinary healthcare team, which is a critical factor for assuring the ongoing quality and safety of patient care.

This project will complement work of the Meridian Health (MH) Pebble Research Team, which investigated the potential effect of floor carpeting and sound-dampening ceiling tiles on patient and staff perception of unit noise and on staff musculoskeletal discomfort; and extend several pilot projects that were performed by the Cornell University team in collaboration with the Cayuga Medical Center (CMC) in Ithaca, New York and the Crouse Hospital in Syracuse, New York. Specifically, the new study will use state-of-the-art PDAs that allow data related to time spent by nurses with patients, type of patient encounter, quality of healthcare information given, and type and location of other health team member encounters to be captured for analysis. Data related to staff perception of the unit's communication patterns and provision of a safe environment will be gathered using a survey that was developed and validated by the Cornell team's previous work, as well as conducting focus group surveys. In addition to these process measures, outcome measures also will be evaluated for both staff and patients. These measures include patient fall and medication error rates, length of stay, patient satisfaction, and perception of quality of care (for patients); and nurse vacancy and nurse turnover (for nursing staff).

The investigators will use a "before and after" study design that captures data on the current nursing units, which basically have a centralized design, prior to moving into the new facilities, and then again after the move into the new decentralized units. This will allow comparison of both process and outcome data between the two environments to determine the impact of the new environment. Results of this study will provide insight into the role that evidence-based design may play in healthcare communication processes and related patient and nurse outcomes. As at least \$25 billion is spent annually on hospital building and renovation, findings such as these will add to the body of evidence-

based design that administrators, architects and clinicians need to base their decisions about environmental construction and change.