

### **CMC Project Background: 2011**

These five projects emerged from conversations Prof. Becker initiated with Rob Lawlis, a leader in performance improvement at the CMC; and Paul Levesque, the principal architect from HOLT Architects, the firm responsible for CMC hospital design. Professor Becker and his graduate students have conducted several graduate research projects at CMC over the past five years; and his course on evidence-based hospital planning and design has done student projects at the CMC for several years. These projects, however, are different. They all are intended to provide information that can be used to inform design and/or operational practices for actual major renovation and new design projects currently being undertaken at the CMC. The projects were presented by Prof. Becker to the medical leaders in each of the project areas noted below, and to the CMC Senior Leadership Team, including the CEO for approval prior to the term starting. All were enthusiastically approved. The level of commitment from hospital clinical and administrative leadership is remarkable.

Students in this class come from both DEA's upper division undergraduate and graduate Facility Planning & Management program, from Human Factors/Ergonomics, from the Sloan Health Administration program, and other units at Cornell. The common thread for all projects is the use of careful observational and other data collection methods drawing on the adaptation of lean process methodologies. These are being used to measure and document current patterns of behavior (e.g., patient and material flow) as they relate to design and operational procedures. These data will then be used to recommend interventions that improve patient safety and care providers' ability to work effectively and efficiently.

#### **1. Neonatal/NICU**

- Identify layout and design factors in the neonatal nursery can reduce the time searching for instruments and materials in life-threatening emergency situations.

#### **2. Ambulatory Surgery**

- Identify and make recommendations about how bottlenecks related to how information is shared among care providers can improve the patient experience and patient flow.

#### **3. Operating Room**

- Identify and make recommendations about how bottlenecks related to how instrumentation, equipment, and supplies is stored and used providers can reduce avoidable trips into and out of the operating theater by nurses.

#### **4. the Lab**

- Study how layout and design may affect communication patterns related to how lab technicians obtain information from co-workers to verify procedures and assist in resolving questions about the nature of samples, their labeling, and testing in order to reduce the opportunity for errors and near misses.

#### **5. Urgent Care.**

- Study how orders are given by doctors to nurses (verbal or written), why one or the other occur, and how the layout and design and the systems for order taking affect the time to fill orders, the time spent with patients, and the number of patients seen.