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## **Optimizing Clinical Performance – The Rothman Institute Joint Replacement Service at Thomas Jefferson University Hospital**

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## Optimizing Clinical Performance – The Rothman Institute Joint Replacement Service at Thomas Jefferson University Hospital

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In 1998, Thomas Jefferson University Hospital (TJUHO) participated in the University Health System Consortium (UHC) clinical benchmarking project for primary total hip replacement. Approximately 1,200 total hip replacements are performed annually by the joint replacement team of the Rothman Institute. After the results of the Hip Arthroplasty Benchmarking Project were tabulated and compared to the results of other institutions, TJUH was selected as a case study for this project because it was found to be the best performer for the care of patients requiring total hip replacement.

Two areas for improvement were identified: the orthopaedic floor and the orthopaedic operating room. For the orthopaedic floor, the goal was high quality, patient-friendly care (patients and their families are the primary source of referrals for the orthopedic practice). A comprehensive system of patient care has been implemented extending from preoperative phone calls and education, all the way to post-discharge management of home care delivery. In the series of patients evaluated by the benchmarking project, postoperative complications were minimized, preoperative education was delivered in 97%, delay in discharge occurred in 10% (the mean for the UHC was 29%), and variance from the established care map occurred in 7% (the mean for the UHC was 19%).

For the orthopaedic operating room, the goal was high quality, efficient care, as the operating room is the most expensive part of the hospital stay. Based on multiple benchmarking criteria, TJUH was number one in many areas. TJUH has the lowest operating room time, the shortest anesthesia to incision time, the shortest time from entering the operating room to incision, the shortest incision to closure time, the lowest estimated blood loss, the highest postoperative hemoglobin, and the least need for intensive care unit transfer. Furthermore, TJUH experienced the lowest rate of surgical complications such as dislocations, fractures, nerve injury, and infection.

Several key factors were identified for the outstanding outcomes achieved: committed leadership, team approach, standardization of practice, measurable outcomes, and incentives.

Teams were comprised of doctors, nursing, anesthesia, and administration, along with teams including physical therapists, occupational therapists, and other healthcare professionals. Everyone acts together toward a common, well-defined goal. Any deviations from standard of care are quickly identified, evaluated, and resolved. The emphasis is on quality of care and responsiveness to patient needs, as well as on cost-efficient care. Specifically, physicians are committed to establishing goals and improving quality of care. An example: surgeons show up early for all their cases in the operating room.

The team concept is paramount. Team members' roles are well defined and well appreciated. The team is dedicated to joint replacement surgery both in the operating room and on the floor. There is a sense of shared responsibility for the

patients' care. The operating room team is a close-knit group that includes an anesthesiologist, anesthesiologist nurse, scrub tech, nurse first assistant, orthopedic head nurse, transport, and recovery room personnel. The floor team includes nurses, physical therapists, social service, home health care, a joint care coordinator, a clinical nurse specialist, and a head nurse.

The practice of joint replacement surgery is complex and intricate. As much as possible, the care of the patients has been standardized both inside and outside the operating room. For example, the doctors have agreed to standardize virtually everything with regard to the surgical procedure: prosthetic choice, instrumentation, prep and drape, post-operative regimens. Despite this apparent regimentation, there exists sufficient flexibility to accommodate new innovations as well as individual preferences. However, compromise is critical to the success of standardization of practice.

Clinical outcomes have been measured in a prospective fashion at the Rothman Institute for over 25 years. These data are regularly reported to national societies. Since 1991 patient completed outcome data have been collected. The doctors are committed to academic clinical research. Newer quality measures are being incorporated. Picker scale evaluations have recently been incorporated in cooperation with TJUH for all joint replacement patients in a continued effort to improve quality of care and patient outcomes.

The orthopaedic joint replacement team of the Rothman Institute and TJUH is committed to the delivery of cost-effective, high quality health care. Ongoing quality assurance programs have been implemented to ensure continued prominence in this effort. It is our hope that the key factors associated with hip replacement could be generalized to other surgical procedures and disease specific treatments.

### **About the Author**

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