Establishing a Center of Excellence: The Total Joint Center at The Miriam Hospital

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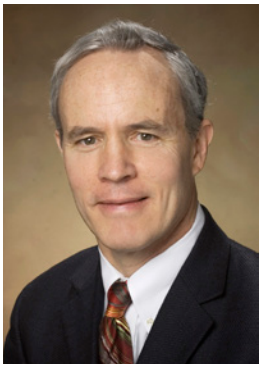
BACKGROUND

Challenges to the delivery of state-of-the-art healthcare to our patients continue to increase in recent years for nations, states, hospitals, physicians, nurses, and support staff. Administrative requirements, documentation demands, and remaining up to date with current principles of care challenge all of us. In the midst of this challenge, The Miriam Hospital has successfully launched a specialized program in orthopedic total joint replacement. In this article, we will describe the development of that program, its guiding principles, challenges, and early results. As a model for the delivery of care, it may also be useful and practical in its application to other specialties.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Stimulated by a journal publication in July, 2008[1] which described the projected increased demand for joint replacement surgery for the next 20 years, the surgical and administrative staffs at The Miriam Hospital launched an overhaul of the total joint replacement program. We were motivated by existing waste in resource integration, sparse shared governance between the administration and surgeons, inadequate alignment of surgical care protocols, and inadequate data-driven outcomes management. We embraced Lean Six Sigma methodology[2] to insure administration/surgeon shared governance, service integration, and the need to establish program champions in our 247-bed teaching hospital.

ESTABLISHING THE PROGRAM

We began by establishing monthly meetings including surgeons, nurses, recovery personnel, physical therapists, case managers, occupational therapists, the hospital's chief operating officer, admission personnel, administrative staff, and anesthesiologists. This spanned the course of one year. We went to great lengths to ask each service sector to describe its expertise in detail, written on a storyboard, outlining all features of care delivery relative to that sector. Over time, it became clear how expert, but separate, each service sector was in relation to the whole program. Biases and inherent resistance to change created by years of clinical experience had to be overcome. This process caused all participants to begin to propose specific changes that would help integrate their service expertise to the rest of the hospital-wide total joint replacement program. In some cases, it was necessary to alter protocols to maximize integration. The obvious commitment of surgeon champions to this process was essential.

VIDEO Total Joint Center at The Miriam

Revamped patient education process

A good example is the preoperative patient education process. This evolved from an unstructured attempt by preoperative testing personnel to answer patient questions, to a formal patient education session now mandatory and offered by a combined surgeon, therapist, case management, and nursing team. Lean Six Sigma methodology was employed.[2] This process, popularized by Motorola after the 1970s, seeks to eliminate errors and minimize variability in a business process or in manufacturing. Creating the education session meant integrating the nursing and physical therapy care over several cooperative sessions. Pain management, wound care, timing and location of therapy services, and diet and bowel function management were all integrated to coordinate delivery and minimize potential delays. Special protocols were developed for the planned day of discharge, compared to other days. Surgeon-to-surgeon variability in therapy management, wound care, bowel management, thrombosis prophylaxis, and pain management was addressed through a surgeon committee that meets monthly. This allows us to address all concerns of participating surgeons and reach consensus for a common order set. Once all of these efforts were complete, a combined patient education session for all patients could be delivered. Since its inception, it now consumes 90 minutes during a visit for routine preoperative testing. Our outcomes data shows that

over 80% of patients regard the session as essential or helpful. An institution-wide commitment to co-governance has been the common thread.

Genesis of Joint Center

The monthly institutional meetings mentioned earlier created opportunities for integrating care and led to results like the patient education session. In 2010 Lifespan made a formal financial commitment to fully develop a joint replacement center located at The Miriam Hospital. With this support, an outside consultant was hired to refine our efforts into a fully functioning Joint Replacement Center. This phase began in October 2010, allowing a full Joint Center launch in November 2011. We also visited another regional joint center to glean insight from that program's development and experience. From the outset, each stakeholder at our institution put his or her signature to a framed Pledge, an eight-point document. This is displayed at several sites in the hospital and describes the program's commitment to shared governance and data-driven outcomes management.

Shared governance

A governance committee was developed to oversee the entire effort, chaired by the director of Surgical Services and two surgeons. It continues to meet monthly, and members from all service sectors are represented, including purchasing, marketing, and information technology. Co-governance and transparency in management across service sectors is stressed. Our data (referred to as the "dashboard") is reviewed each month, providing current information on features such as cost consumption, length of stay, transfusion rates, discharge destination, patient satisfaction, etc. (*See Table.)* It is also tracked on a surgeon-specific basis. This outcome data is then used to pose specific projects to address and facilitate improvement, with a team leader for each project, and a clear deadline for completion. The Committee then reviews the results, and protocol changes implemented as needed. This structure and process has lead to a large number of successful outcomes data-driven program changes.

Patient navigators

Our management now includes the work of a full-time registered nurse/manager to serve as a patient navigator. This individual follows the patient closely throughout the entire hospital experience, providing extra advice, reassurance, and serves as a liaison with case management to facilitate discharge planning and expectations. She also sits on the governance committee to help facilitate continuity of care. Patient-care problems can be brought directly to her attention, and direct surgeon feedback offered. This individual also gives the primary care physician a summary of the hospital experience after each patient discharge. In August 2012, a second full-time nurse practitioner also began assisting the surgeons and nursing staff with direct postoperative medical care for all of our patients.

Multi-disciplinary approach

The basis of the total joint center's early success is the use of a multi-disciplinary approach with collaboration between various care and service providers. To achieve this we had to learn or re-learn what others do and make a concerted effort to meld these services. Obviously, this requires working not as individuals but rather as a team. The ultimate focus is on the patient and his/her needs. To achieve the goals we set, we used the governance model to reach consensus and achieve well-defined outcomes.

PROGRAM GOVERNANCE

A key organizational component of the Total Joint Center is the governance committee. As mentioned, this is comprised of key service providers to our patients before, during and after discharge. To maintain a focused and direct approach, a dashboard was created with components that were felt to be key to the success of the program and the needs of our patients. The dashboard is a monthly "snapshot" of our trends and associated success as intervention is pursued. The dashboard is divided into four sectors: 1. Financial, 2. Operational, 3. Patient experience and 4. Quality. (*See Table.*) This design allows us to provide direction to the entire Total Joint Center team and promotes a process of continual inspection/re-evaluation. Using this approach, we have been able to achieve impressive results in our first year of formal operation. Specific components within the dashboard

Table: Total Joint Center of Excellence Management Data Dashboard

FINANCIAL
- Combined Hip/Knee/Shoulder Caseload
- Total Supply Cost per Case
- Total Labor Cost per Case

OPERATIONAL
- Average Length of Stay
- OR Room Turnover Time
- OR First Case On-Time Starts
- Discharges to Rehabilitation

PATIENT EXPERIENCE *(From Press-Ganey Survey Scores)*
- How Well Was Your Pain Controlled?
- Likelihood of Recommending Hospital?
- Did the Staff Include You in Decisions Regarding Treatment?
- Discharge Composite Score
- Patients Attending Preoperative Education Class

QUALITY
- SCIP Criteria: Patients on Recommended VTE Prophylaxis
- SCIP Criteria: % Of Patients Who Received Timely VTE Prophylaxis
- Surgical Site Infections
- Patient Falls While in Hospital
- Readmissions Within 31 Days
- Transfused Cases for Total Hip and Total Knee Replacement
- Transfused Cases with Hemoglobin >/= To 8g/Dl
- Urinary Catheters Removed by Post-Op Day 1

may be modified (for example, changed to a higher goal), eliminated (no longer appropriate) or a new parameter added.

Specific Trends

Several specific trends are worthy of mention. Prior to the onset of this program, the average length of stay for the total joint patient was 3.7 days. This has continued to trend down and currently is 3.2 days. This alone represents a significant savings to the institution, especially since the number of patients who underwent replacement was 1,208 in calendar year 2012. Greater efficiencies in the operating room have resulted in an average decrease in room turnover time from 41 minutes to 21 minutes in 2012. Prior to this program, the typical patient went to a skilled nursing facility on average 75% of the time. With patient/family education, more comprehensive and consistent pain management, and accelerated inpatient rehabilitation during the hospital admission, this number has decreased to 29%.

We have seen truth to the adage: "If you build it they will come." The number of participating surgeons has increased from an initial core of 5 to 9 currently, with interest among others in the community to participate. Patient volume has also increased substantially from roughly 750 procedures in 2010 to 1,208 in 2012. Now over 80% of cases start on time in the morning, whereas fewer than 1 in 4 achieved this prior to the program. This feature alone illustrates the effectiveness of establishing a team-oriented multidisciplinary approach. Many perceived this as an "anesthesia issue." Further analysis showed this to be multi-factorial. Adjustments were made in patient arrival, staffing, a call-in system to assure surgeon availability and adjustment in anesthesia availability. The results are impressive. Rooms are better utilized, work is completed sooner, patients arrive sooner on the nursing floor facilitating care, and patients are available sooner for the initiation of same-day physical therapy.

Achieving these and other goals is important. Equally as important, the program has created a cooperative and cohesive environment, which is appreciated not only by the institution and staff, but also the patients themselves. It is an incredibly positive attribute that promotes further improvements in the program. We have also found that this team cohesion promotes a collegial "buy-in."

Additional features

Several additional features of the program warrant mention. We were fortunate to have at our disposal the hospital's data system and an individual very facile in data analysis. This allowed us to rapidly evaluate data and/or issues and create action items that were used to rectify problems or facilitate improvement. Another key to the entire program is its patient-centric approach. As such, the dedicated nurse navigator and nurse practitioner contribute to patient care in the pre-operative, post-operative and post-discharge phases of patient care. They also contribute greatly to building the relationship between the institution, the surgeons and the primary care physicians. Having all stakeholders involved and informed is imperative for optimal patient care. Finally, the surgeon committee, which meets monthly, has provided an important forum for surgeons from different groups to interact, discuss, and share ideas so as to reach consensus on common issues, which leads to streamlining of care and greater efficiencies.

SUMMARY

The Total Joint Center at The Miriam Hospital has been very successful and now serves as a model for other specialties. Key to this program's success is the cooperative relationship between various stakeholders. Leadership is required yet the input and participation of all is necessary to achieve the desired outcome. To achieve efficiencies, there must be a willingness to deeply integrate clinical services. Again, this requires input from sectors that in the past typically did not communicate with each other. Finally, surgeons and staff need to "pledge" and show their willingness to practice based on sound patient data and modify treatment based on this same data.

We are extremely proud of the results achieved. Also impressive is how, in a very short period of time, we have been able to bring together an extremely dedicated team of professionals who work cooperatively in a seamless fashion. With this approach we are able to meet our strategic goal of providing state-of-the-art, high quality, patient-centric, efficient healthcare.

References

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Disclosures

Drs. Froehlich and Ferguson receive compensation from Lifespan as co-directors of the Total Joint Center of Excellence at The Miriam Hospital.

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