QI Project: Ambulatory Rehabilitation for Total Joint Replacement: A Quality Improvement Approach to an Integrated System of Care

**Health Theme:** Access  
**Health Sector:** Acute Care, Long-term Care, Rehabilitation Care  
**Location:** Ontario - Mississauga Halton LHIN  
**Project Uploaded:** Nov 2014

**Summary**

The Ambulatory Rehabilitation for Total Joint Replacement (TJR) Project was initiated in the Mississauga-Halton LHIN (MHLHIN) due to concerns related to ambulatory rehabilitation capacity, lack of standardization and transparency surrounding eligibility criteria for services for patients undergoing hip and knee arthroplasty. A team representing the MHLHIN, Community Care Access Centre (CCAC) and the two MHLHIN hospitals (Halton Healthcare Services (HHS) and Trillium Health Partners (THP) was formed to determine current state, identify root causes and implement appropriate change ideas with the aim of providing patient centred care based on best practice in a fiscally responsible manner. As the Ontario Auditor General indicated in his December 2013 report, data collection is not reported for the ambulatory rehabilitative phase of care making it difficult to evaluate cost effectiveness and demand which is required for planning purposes. In order to remedy this situation and be able to demonstrate effectiveness and efficiency, a QI approach was taken including the initiation of data collection processes and analysis. This data now facilitates evaluation of the effect of any change made to the model of care via the monitoring of selected outcomes / indicators that are aligned with the HQO (Health Quality Ontario) 9 dimensions of quality. PURPOSE: The goal of this QI project was to ensure MHLHIN patients undergoing total joint replacement receive the right ambulatory rehabilitative care, at the right time and in the right place. To successfully fulfil this goal across the ambulatory continuum of care, there was a need for standardization and transparency of processes, eligibility criteria, and defined clinical outcomes and indicators.

**Approach**

**Aim**

By March 2015, 90% of patients receiving a TJR will improve their functional outcomes by 30% within 8 weeks of postoperative ambulatory rehabilitation. The Integrated Orthopaedic Capacity Planning (IOCP) Committee had heard anecdotal reports from physicians, patients and rehabilitation therapists of significant variations across the LHIN with regards to capacity, access and eligibility to ambulatory rehabilitation post total joint replacement (TJR). This was coupled with a known overutilization of in-home therapy services to cover gaps in service access. A decision was made to proceed with a current state and gap analysis with the intent to implement a standardized model of care for TJR which included maximizing opportunities to provide care in congregate settings, decrease reliance on in-home care as well as suggested timeframes and outcomes for the ambulatory rehabilitation care continuum. This work has built on the model of care for TJR developed by the GTA Rehab Network along with evidence from literature and experiences of front line staff, physicians and patients in the MHLHIN.

**Change Ideas**

The project's driver diagram generated 2 primary drivers and numerous secondary drivers. For the purpose of the IDEAS program, our group focused on 1 integrated Service Processed. It was felt that once improved processes were in place, they could be sustained regardless of the model of care decisions. Six concurrent Plan Do Study Act (PDSA) cycles were launched. Front line staff were actively engaged in all PDSA testing except development of the Surgeon Satisfaction Survey cycles. Patient feedback was also solicited during Patient Satisfaction Survey cycles.

**Measures**

<table>
<thead>
<tr>
<th>Type</th>
<th>What Measure</th>
<th>How are you measuring?</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
<td>Best Practice Guidelines</td>
<td>% of patients screened for preop CCAC Visit</td>
<td>↑ Increase</td>
</tr>
<tr>
<td></td>
<td>Opportunities for integration</td>
<td>% of patients receiving 1st appointment prior to discharge</td>
<td>↑ Increase</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>% patients attending pre-op education class</td>
<td>↑ Increase</td>
</tr>
<tr>
<td>Process</td>
<td>Equitable Referrals</td>
<td>% of patients referred to outpatient physiotherapy/in home care</td>
<td>↑ Increase</td>
</tr>
<tr>
<td>Balance</td>
<td>Patient Refusal</td>
<td>% patients refusing outpatient</td>
<td>Monitor</td>
</tr>
</tbody>
</table>

*IDEAS (Improving & Driving Excellence Across Sectors), is a province-wide learning initiative to advance Ontario’s health system priorities by building capacity in quality improvement, leadership and change management across all health care sectors. Participants apply IDEAS quality improvement program learnings to applied projects from their own organization or local health systems over the course of the five-month Advanced Learning Program.*
<table>
<thead>
<tr>
<th>Patient Decline</th>
<th># patients declined by site post op rehab services</th>
<th>Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>physiotherapy due to transportation</td>
<td></td>
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Results and Learnings

Documented results of the implementation of a QI project's change ideas that include key learnings, experience and insights. These contribute valuable information to others and contribute to overall QI knowledge to support sustainability and spread.

Data Highlights

The key process and outcome results of the project

Ambulatory Rehabilitation data for TJR is now being collected across the MH LHIN. Clinical Outcome Measure results have shown that the average change in Lower Extremity Functional Scale (LEFS) score is currently 33.59 % and the average TKR Knee Flexion Range of Motion (ROM) at discharge.

Sustainability

What has been done to sustain improvements since the initial QI project end cycle, or why and how the initial project plan has evolved over time

Planning for sustainability began early in the project. As new processes and tools were rolled out, the team was cognizant of the time demand that would be placed on front line staff. Low time burden and ease of use were built into all new designs. Regular stakeholder communication has been undertaken to inform of project wins and progress made. The team felt this was particularly important for the front line staff to continue to see positive results from their contributions. Discussions are in place with decision support at all four organizations to implement a sustainable process for data collection and reporting that will continue past the close of the project. Continued reporting is felt to be crucial to sustaining the success of the change initiatives.

Spread

The degree to which the project improvements and learnings have been adopted and adapted by others within the same setting and/or by other settings, or to identify the main target audience for potential spread

Our project has spread beyond the scope of ambulatory rehabilitation to other phases of the Total Joint Replacement continuum of care. Members of the in-patient team are reviewing their processes and outcomes to ensure efficient and effective achievement of best practice and outcomes that have been identified in the literature for this phase of care. Interest has been shown in the use of a driver diagram to direct and inform additional orthopaedic initiatives within the LHIN. This team has lived the experience with the ambulatory rehabilitation project and witnessed the improved focused discussions related to selecting appropriate indicators that utilization of the driver diagram provided to the group. Our team has been actively sharing the QI and EBD message to groups via presentations (eg. MHLHIN Heath System Funding Reform Committee, Senior Leadership, THP Orthopaedic Surgeon Monthly meeting, THP Interdisciplinary Bone and Joint Committee, Staff Meetings). Members of the Bone and Joint Committee have taken the EBD philosophy forward to institute changes to patient education teaching that is provided preoperatively to the patient. Regular knowledge transfer of the QI IDEAS teachings by the project team are routinely taking place during each Project Steering Committee Meeting. Most recently, an abstract for this project was accepted at the University of Texas Shared Visions Conference for poster presentation, allowing our learnings and message to be spread even farther afield.

Setting

The most valuable setting-specific learnings, insights, experiences from the project that will be relevant to the spread to other settings

Resources

This project was fortunate to have received support for a full time Project Lead to manage the project, coordinate and monitor the PDSA cycles, manage the collected data, and meet with stakeholders. Whenever necessary, Rehabilitation Managers and Directors from the hospital sites and CCAC.

People

The project experienced various levels of commitment from key stakeholders. We received excellent support from Managers and Directors in terms of time resources, enabling front line clinicians (Physiotherapists, Occupational therapists, Case Coordinators) to be actively involved in the project.

Organizational Enablers

The project results were directly related to the commitment of the MHLHIN to provide funding for a dedicated project Lead, as well as the support from the leaders at the 3 organizations. Additionally, all contributing organizations support a culture of quality provision of excellence in care.

System Factors

Large challenge inherent to this project was the need to perform QI activities which required the involvement
of multiple sites and providers. Communication proved to be an important tool to meet this challenge. A communication plan was implemented.
Lessons Learned

1. Start with driver diagram for selection of appropriate indicators/metrics to support QI Improvement. Process is iterative based on team experience and discussions.

2. Utilization of control charts and special cause analysis are useful tools to support decision making in changes.

3. Rapid cycle PDSAs drive and inform fast change.

4. Greater time required to cycle through each PDSA cycle when change initiative involves multiple organizations.

5. Change initiative / PDSA cycles drive change at the patient level.

6. Adaptive Leadership - engagement of front line staff.

7. Quality Improvement leads to innovation.

For future projects, our team would recommend the development and utilization of a driver diagram from the outset of the project. This tool provided focus and structure to our discussions, planning and indicator selection. Additionally, utilization of PDSA methodology to implement change provided a framework to roll out initiatives, engage the frontline staff in this change, and remain focused on the "why".

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