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Safety/QA/QI Projects

Mayo Clinic OASIS Project: Addressing Barriers to Outpatient Same Day Discharge

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Introduction

A collaboration between our institution Orthopedic Surgery and Anesthesiology Departments has been in development since 2017, with partnered efforts to optimize care delivery in total joint arthroplasties. This partnership, commonly referred to as the Orthopedic Surgery and Anesthesiology Surgical Improvement Strategies (OASIS) initiative, has generated tangible practice improvements within all perioperative phases of care and patient experience. OASIS efforts have provided information extremely useful to identify specific barriers that may impact the discharge process for outpatient and or same day arthroplasty and explore potential solutions for improvement.

Materials and Methods

IRB approval was waived for this quality improvement project. A multidisciplinary workgroup was formed which included representatives from orthopedic surgery, anesthesiology, physical therapy, pharmacy, patient education, and nursing. A discharge tracking tool was developed based on common discharge barriers reported by nurses for outpatient total joint arthroplasties (hip, knee, shoulder, and elbow) (figure 1). Common barrier themes were classified under the following headers: discharge criteria, pain management, discharge paperwork, equipment, supplies, prescriptions, PT/OT, and postoperative provider visit. Nurses collected baseline data using the discharge tracking tool on 34 patients between April 26th, 2021 and May 14th, 2021.

The workgroup used baseline data to structure interventions aimed at reducing barriers to efficient discharge. Interventions included: (1) creation of a standardized same-day surgery postoperative order-set used for all arthroplasties by all surgeons, (2) consistency of orders for pain control, physical therapy, after visit summary (AVS) instructions, and discharge, (3) scheduling PT/OT education sessions prior to surgery, (4) improving communication of same-day discharge plans with patients prior to surgery, (5) clarification of provider-patient communication prior to discharge, and (6) the ordering process for consistent durable medical equipment (DME).

The same discharge tracking tool was again used by nurses to capture post-intervention data and potential entropy of practice patterns on 27 patients from November 8th, 2021 to November 19th,

2021. Weekly touchpoints were conducted by the workgroups throughout the study period to engage the stakeholders in ways to improve the process.

Results/Case Report

Baseline data collection from April 26th, 2021 to May 14th, 2021 captured 24 barriers to discharge in a sample size of 34 patients. The survey collection between November 8th, 2021 to November 19th, 2021, highlighted 17 barriers to discharge in a sample size of 27 patients. The frequency of specific barriers from each data collection period is highlighted in table 1. In some cases, more than one barrier type was linked to a single patient.

Regarding pain control and anesthetic related barriers, no patients in either study period experienced pain sufficient to prohibit discharge. However, approximately 10% of patients in both cohorts demonstrated residual spinal anesthetic (motor weakness) that delayed their discharge from the outpatient unit.

Positive impacts on discharge barriers occurred in the following categories: change in status (inpatient to outpatient), same day discharge (SDD) flag not used in EHR, missing pain management orders, missing discharge orders, and a delay in PT/OT evaluation. Conversely, negative trends identified included patients unaware of SDD plan, incomplete discharge paperwork, missing DME prescriptions, and delays due to postoperative provider-patient communication.

The frequency of question-related calls from nursing staff to surgical service providers is displayed in table 2 and showed a small reduction in the number of initial calls between the two study periods. In the first data sample, provider calls occurred in 16 of 34 patients, and 10 of 27 patients in the second data collection.

Discussion

The outcomes of this project illustrate the difficulty in change management. Alterations in workflow, patient care, and the overall complexity of the discharge process rely on collaboration and teamwork across multiple stakeholder lines. As an example, at the start of the trial, one problematic workflow pattern in the SDD process involved changing an outpatient overnight discharge status to outpatient same day status when the patient met discharge criteria. In a complex large academic institution, this simple change in disposition status had multiple negative downstream effects. These included missing postoperative orders and equipment, lost prescriptions, bed control problems, nurse staffing issues, and multiple other delays. Through education of providers and preoperative screening methods this process was significantly improved from baseline data.

Overall, most of our recognized barriers to discharge showed improvement or were not negatively impacted despite significantly increasing the volume of patients undergoing same day discharge. Minor regressions were observed in five discharge barrier categories, but these changes were not significant and did not reflect a large deviation from baseline.

Our workgroup examined these deficiencies and identified immediate opportunities for improvement. In theory, our standardized postoperative order set included all the necessary elements to reduce discharge barriers. However, it was noted that not all provider teams were consistently using the new order-set, allowing some gaps to persist. Continued education and awareness of these order sets is warranted. Furthermore, our DME ordering process continued to rely on a paper copy of the

prescription, causing great inefficiencies. The results from this project prompted a plan to transition our DME ordering to an electronic process, which should reduce this barrier. Moreover, this QI project has validated the need for additional personnel to decrease the number of calls to the surgical team operating, correcting erroneous or forgotten orders, and following up with patients in the outpatient setting.

Finally, this project illustrates the necessity of continuous assessment and re-evaluation in practice optimization efforts. Seldom is a single PDSA (plan-do-study-act) cycle sufficient to produce sustainable change management and practice growth.

References

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2. Wyles CC, Smith HM, Amundson AW, Duncan CM, Niesen AD, Ingalls LA, Zavaleta KW, VanDeVoorde RA, Ryan JL, Sanchez-Sotelo J, Taunton MJ, Perry KI, Mabry TM, Abdel MP. Orthopedic Surgery and Anesthesiology Surgical Improvement Strategies Project: Phase I Outcomes. *J Arthroplasty*. 2021 Mar32978023.
3. Wyles CC, Abdel MP, Amundson AW, Duncan CM, Pepper MB, Ingalls LA, Zavaleta KW, Smith SK, Ryan JL, Taunton MJ, Perry KI. Orthopedic Surgery and Anesthesiology Surgical Improvement Strategies Project—Phase II Outcomes. *The Journal of Arthroplasty*. 2021 Jun 1;36(6):1849-56;36(3):823-829. doi: 10.1016/j.arth.2020.09.003. Epub 2020 Sep 9. PMID:.

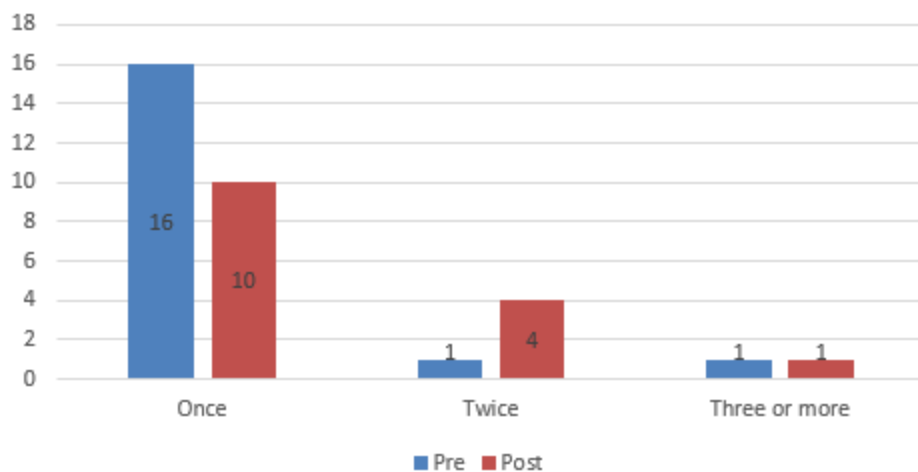
Disclosures

No

Tables / Images

Barriers of Discharge	Survey Collection Period 4/26/2021 - 5/14/2021 (Patients=34)	Survey Collection Period 11/8/2021 - 11/19/2021 (Patients=27)
Discharge Communication		
<input type="checkbox"/> Pt. not aware of SDD plan	0	2 (7%)
<input type="checkbox"/> Change in status (inpatient to outpatient)	1 (3%)	0
<input type="checkbox"/> SDD flag not used in EHR	2 (6%)	0
Pain Management		
<input type="checkbox"/> Missing Orders	2 (6%)	1 (4%)
<input type="checkbox"/> Pain Service needed	0	1 (4%)
<input type="checkbox"/> IV pain meds needed	0	0
Discharge Paperwork		
<input type="checkbox"/> Incomplete AVS	2 (6%)	5 (18%)
<input type="checkbox"/> Missing DC order	5 (15%)	4 (15%)
Equipment, Supplies, & Prescriptions		
<input type="checkbox"/> Missing DME Prescription	2 (6%)	5 (18%)
<input type="checkbox"/> Missing Post Op Prescriptions	2 (6%)	1 (4%)
<input type="checkbox"/> Medication not ready in Pharmacy	0	0
PT/OT		
<input type="checkbox"/> Delay in Spinal Anesthesia diminishing	3 (9%)	3 (11%)
<input type="checkbox"/> Delay in PT/OT Arriving (>1hr)	2 (6%)	1 (4%)
<input type="checkbox"/> Missing Orders	0	0
Post Op Visit		
<input type="checkbox"/> Waiting on Provider for Post Op Visit	3 (9%)	6 (22%)

Number of Pages to the Provider



Orthopedic Outpatient Discharge Readiness Tracker

Surgical Date: _____ Service: _____ Date: _____

Circle One: Hip / Knee / Shoulder / Elbow

Primary / Revision

Anesthesia Type: Spinal / General / Peripheral Nerve Catheter

Arrival to Unit Time (24hr): _____

Discharge Time (24hr): _____

Discharging RN _____

Discharge Criteria	No Barriers ✓	Barriers ✓	# of Pages to Service (Tally)	Time waiting for page response	
				15-30 min	>30 min
Discharge Communication		<input type="checkbox"/> Pt. aware of SDD plan <input type="checkbox"/> Change in status (inpatient to outpatient) <input type="checkbox"/> SDD flag not used in Epic			
Pain Management		<input type="checkbox"/> Missing Orders <input type="checkbox"/> Pain Service needed <input type="checkbox"/> IV pain meds needed			
Discharge Paperwork		<input type="checkbox"/> Incomplete AVS <input type="checkbox"/> Missing DC order			
Equipment, Supplies, & Prescriptions		<input type="checkbox"/> Missing DME Prescription <input type="checkbox"/> Missing Post Op Prescriptions <input type="checkbox"/> Medication not ready in Pharmacy			
PT/OT Patient ready for PT @ _____ Time PT paged _____ PT arrival time _____		<input type="checkbox"/> Delay in Spinal Anesthesia diminishing Circle the noted timeframe: 60 – 90 minutes 91-120 minutes > 120 minutes <input type="checkbox"/> Delay in PT/OT Arriving (>1hr) <input type="checkbox"/> Missing Orders			
Post Op Visit		<input type="checkbox"/> Waiting on Provider for Post Op Visit Circle the noted timeframe AFTER ready for D/C: 30 - 60 minutes 61 - 90 minutes > 90 minutes			