Simple Measures to Reduce Opioid Prescriptions Following Pediatric Spinal Fusion Surgery: A Multidisciplinary Quality Improvement Project

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BACKGROUND

The opioid epidemic in the United States is a significant and well publicized public health crisis. Orthopedists are the 4th leading prescriber of opioids in the United States. Within pediatric orthopedics, spinal fusion is a relatively common procedure making up 7% of our institution's surgical volume, with high post-operative opioid prescription rates.

AIM STATEMENT

To reduce and standardize the number of opioids prescribed after Posterior Spinal Fusion while maintaining adequate pain control.

METHODS

- A multidisciplinary team was formed, including physician champion, pharmacy, inpatient and ambulatory nursing, quality and electronic medical record team
- Baseline data was collected and reviewed.
  - 99 patients undergoing PSF for Adolescent Idiopathic Scoliosis/Juvenile Idiopathic Scoliosis from May – November 2017
  - Established baseline prescribing practices
  - Administered patient surveys through Redcap to measure patient satisfaction with pain management upon discharge from the hospital
  - Response rate was 27% out of 99 patients.
- Literature review was performed
- Sequential rapid cycle improvement strategies were initiated
  - Utilized Plan-Do-Study-Act (PDSA) cycles for improvement

CYCLES OF IMPROVEMENT

PDSA Cycle 1

- Implemented standardized reduced opioid discharge regimen with 45 doses
  - Created dosing taper tool
  - Created pharmacy led education program for patients and families
- Continued patient surveys to measure their satisfaction with new pain regimen
  - Response Rate: 73% out of 95 patients

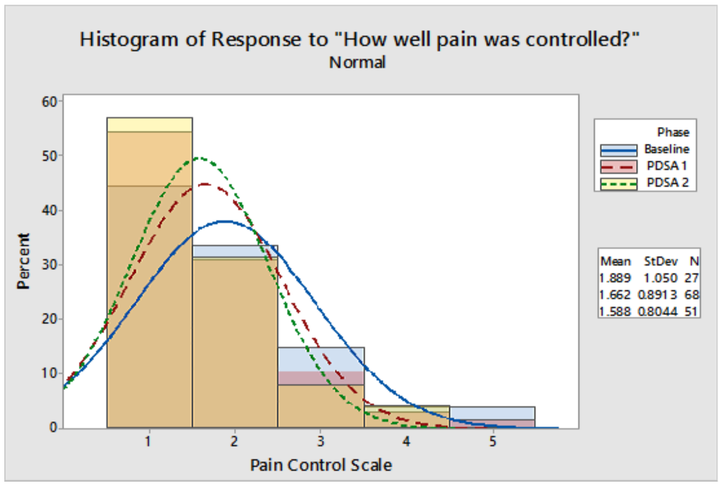
PDSA Cycle 2

- Implemented standardized reduced opioid discharge regimen with 40 doses
  - Updated dosing taper tool
  - Updated pharmacy led education sheet
- Continued patient survey to measure their satisfaction with new pain regimen
  - Response Rate: 39% out of 178 patients

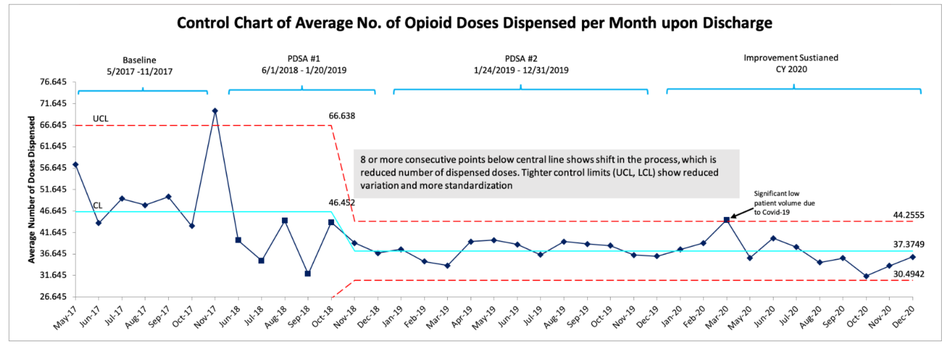
RESULTS

- In the pre-intervention phase, significant variation was found with a mean of 48.54 (SD 16.6) doses. 77% of survey respondents reported that their pain was "very well" or "well" controlled.
- PDSA cycle 1: mean of 39.0 (SD 11.1) doses. 85% of respondents reported their pain was "very well" or "well" controlled.
- PDSA cycle 2: mean of 37.5 (SD 6.68) doses. 85% of respondents reported their pain was "very well" or "well" controlled.
- Sustain phase: mean of 36.4 doses (SD 7.64) doses.
- 59%, 37%, and 42% of patients reported using narcotics for greater than 10 days in pre-intervention, PSDA 1, and PDSA 2, respectively.
- There was an estimated reduction of 22.8%, or 4689 doses, over the course of the study.

FIGURES AND CONCLUSION



Scale of 1-5 with 1 being "very well controlled" and 5 being "very poorly controlled"



A standardized approach to opioid prescribing after PSF reduces variation and number of doses (p=0.022), while maintaining adequate pain control. Our methods were sustainable even after formal interventions by the quality team were terminated.