Problem Definition

- Minimally invasive surgery (MIS) is increasingly common and reduces patient morbidity, hospitalization time, and costs.
- Previous studies have found that opioids are routinely prescribed after MIS, and the majority go unused.
- Interventions restricting opioids following gynecologic and urologic surgery have resulted in fewer prescriptions while maintaining patient comfort.
- At Jefferson, the established pain protocol for urologic MIS includes default PRN opioids for pain control.
- We implemented a novel pain protocol to reduce narcotics following MIS.

Aims For Improvement

- The intervention aimed to reduce narcotics provided to patients after MIS by:
  - Reducing number of narcotic prescriptions and amount prescribed by 25% without affecting patient-reported pain scores
  - Usage measured in Morphine Equivalent Doses (MED)
  - MED and pain score assessed at 3 time points: post-op day 1 (POD1), discharge (D/C) and follow-up (FU) apt
- Pre- and Post-intervention cohorts
  - Month 1 (Pre-intervention): 21 patients
  - Month 2 (Post-intervention): 30 patients

Intervention

June Pre-Intervention (PrI): Patients received the established pain regimen
- Opioids automatically prescribed postoperatively and at D/C

July Post-Intervention (PoI): Patients received the novel pain regimen
- “Opt-in” for prescribing opioids
- Prioritize non-narcotics for first line management
- “24 hour” rule: patients were D/C’d without narcotics if they did not require them within 24 hours prior to D/C
- Pt education at D/C on pain control

June Post-Intervention (PoI): Patients received the novel pain regimen
- Opioids automatically prescribed postoperatively and at D/C

1* Endpoints at POD1, D/C and FU:
- # of pts prescribed opioids and amount (in MED)
- NRS Pain score (0-10)

2* Endpoints:
- Opioids prescribed and used over surgical course

Next Steps and Lessons Learned

- The number and amount of narcotics prescriptions were reduced by more than 70% without affecting pain scores.
- Currently, the new pain protocol remains in use at Jefferson following urologic MIS.
- Future directions include the reduction of intraoperative narcotics and increased use of local anesthesia.
- Our team learned that small shifts in approach, including electronic “nudges” and patient education, can result in drastic results that benefit patients.

Citations


Measurement and Results

- Subjects were demographically similar, underwent the same procedures and had approximately the same LOS and length of follow-up
- Analyses were performed for the entire cohort;
  - Subset analysis of patients undergoing a Radical Prostatectomy (RP)
  - Intervention resulted in 70% fewer subjects being prescribed narcotics at discharge, and a 95% reduction in amount prescribed in the entire cohort
  - RP subgroup analysis revealed a similar reduction in mean amount of narcotics prescribed at discharge
- At POD1, D/C and FU, there was no significant difference in pain scores between the PrI and PoI groups

Table 1: Mean MED and NRS Pain Scores for the General Cohort

<table>
<thead>
<tr>
<th>POD 1</th>
<th>PrI (n=21)</th>
<th>PoI (n=30)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients receiving narcotics, n (%)</td>
<td>15 (71.4%)</td>
<td>23 (76.7%)</td>
<td>0.673</td>
</tr>
<tr>
<td>MED (mg, mean [95% CI])</td>
<td>15.2 [6.4, 36.1]</td>
<td>16.9 [8.5, 33.6]</td>
<td>0.845</td>
</tr>
<tr>
<td>NRS pain score, mean (SD), [95% CI]</td>
<td>4.0 (2.8), [2.8, 5.3]</td>
<td>4.5 (3.0), [3.3-5.6]</td>
<td>0.752</td>
</tr>
</tbody>
</table>

Discharge

| Patients discharged on narcotics, n (%) | 21 (100%) | 9 (30.0%) | <0.001 |
| MED (mg, mean [95% CI]) | 69.3 [60.0, 80.2] | 3.5 [1.7, 7.4] | <0.001 |
| NRS pain score, mean (SD), [95% CI] | 3.6 (2.6), [2.4, 4.7] | 4.1 (2.6), [3.4, 5.1] | 0.597 |

Follow-Up

| Patients receiving additional narcotics, n (%) | 2 (9.5%) | 3 (10.3%) | 0.924 |
| MED (mg, mean [95% CI]) | 14.7 [5.9, 36.7] | 3.5 [1.7, 7.0] | 0.011 |
| NRS pain score, mean (SD), [95% CI] | 1.5 (2.1), [0.5, 2.4] | 1.6 (2.6), [0.6, 2.6] | 0.759 |

MED over Entire Surgical Course

| Prescribed MED (mg, mean [95% CI]) | 103.0 [79.9, 132.7] | 23.3 [10.9, 49.8] | 0.002 |
| Used MED (mg, mean [95% CI]) | 35.8 [15.4, 84.9] | 20.9 [10.1, 43.1] | 0.327 |