

Improving Postoperative Care of Minimally Invasive Gynecologic and Urologic Ambulatory Extended Recovery Patients: Non-pharmacological Pain Management

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Background

- Multiple etiologies of pain after laparoscopy – first 24-48 hrs can be more severe than open surgery¹.
- Insufflation of CO₂ into the abdomen can cause cramping, bloating, and shoulder tip pain².
- Repeated opioid dosing can lead to sedation, respiratory depression, ileus, constipation, opioid-induced hyperalgesia, and nausea or vomiting³.
- No alternative, complementary, or non-pharmacological interventions for pain were formally included in AXR pathways
- Pain management varied unit to unit and nurse to nurse
- Patients prefer to avoid medications if possible⁴.

References

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2. Blencowe, N.S, Waldon, R., & Vipond, M.N. (2018). Management of patients after laparoscopic procedures. *British Medical Journal*, 360. doi: 10.1136/bmj.k120.
3. Hah, J.M., Bateman, B.T., Rattliff, J., Curtin, C., & Sun, E. (2017). Chronic opioid use after surgery: Implications for perioperative management in the face of the opioid epidemic. *Anesthesia & Analgesia*, 125(5), 1733-1740. doi: 10.1213/ANE.0000000000002458.
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Aims

1. Increase the mean number of documented non-pharmacological interventions
2. Decrease mean pain scores at the time of first follow up assessment and discharge
3. Decrease mean opioid use from four hours postoperatively until discharge
4. Decrease the prevalence of individuals being converted from AXR to inpatient because of pain control issues

Methods

DESIGN: **Quality improvement** project with a **pre-/post- design**

SETTING: **3 designated AXR units** at comprehensive cancer center

SAMPLE: All post-operative **minimally invasive gynecologic or urologic surgery patients on AXR unit who were discharged per pathway after 1 night or became inpatient because of pain, over two 12-week periods (pre- and post-implementation)**

Intervention

Order Summary
09/17/2019 09:48, Requested by: Attending, Deepali (MD)

Non-Pharmacological Pain Management -
 -Demonstrate use of PCARE Videos:
 -Acupressure for Pain and Headaches
 -Touch Therapy for Caregivers (Massage)
 -Guided Imagery Meditation
 -Mindful Breathing Meditation & Managing Pain with Meditation
 Decrease lighting and noise.
 Encourage listening to music via headphones.
 -Exercise as tolerated q1-2h day and night:
 -While in bed, bend and straighten legs or rock knees side to side with legs bent.
 -Begin ambulation by 4h post-operatively, as long as clinically stable.
 Order mint or ginger tea from Food and Nutrition for gas pain when tolerating PO.
 Apply hot packs to abdomen and/or shoulders as needed. Do not apply directly on skin.
 Requested For: 09/17/2019,Routine
 <Requested for: 09/17/2019>PendingOrder Release

Key Demographics

Characteristic	Pre-Implementation (N = 96)	Post-Implementation (N = 86)
Age, mean (SD)	58.7 (9.51)	59.9 (10.23)
Sex, n (%)		
Male	33 (34.4)	24 (27.9)
Female	63 (65.6)	62 (72.1)
Surgery Duration (minutes), mean (SD)	169.7 (74.9)	169.9 (76.3)
Length of Stay (minutes), mean (SD)	1253.6 (272.4)	1235.0 (259.5)
Surgery Type, n (%)		
RA TLH with or without BSO	50 (52.1)	44 (51.2)
Lap TLH with or without BSO	8 (8.3)	9 (10.5)
RA oophorectomy or ovarian cystectomy (R and/or L, with or without salpingectomy)	1 (1.0)	4 (4.7)
Lap oophorectomy or ovarian cystectomy (R and/or L, with or without salpingectomy)	2 (2.1)	2 (2.3)
RA Prostatectomy	26 (27.1)	17 (19.8)
Lap Prostatectomy	0 (0)	3 (3.5)
RA Partial Nephrectomy	5 (5.2)	3 (3.5)
Lap Partial Nephrectomy	2 (2.1)	0 (0)
RA Radical Nephrectomy	0 (0)	3 (3.5)
RA Adrenalectomy	1 (1.0)	0 (0)
RA GYN debulking	0 (0)	1 (1.2)
Lap GYN debulking	1 (1.0)	0 (0)
PLND done, n (%)	64 (66.7)	61 (70.9)
Additional Ancillary procedure done, n (%)	3 (3.1)	5 (5.8)

Results

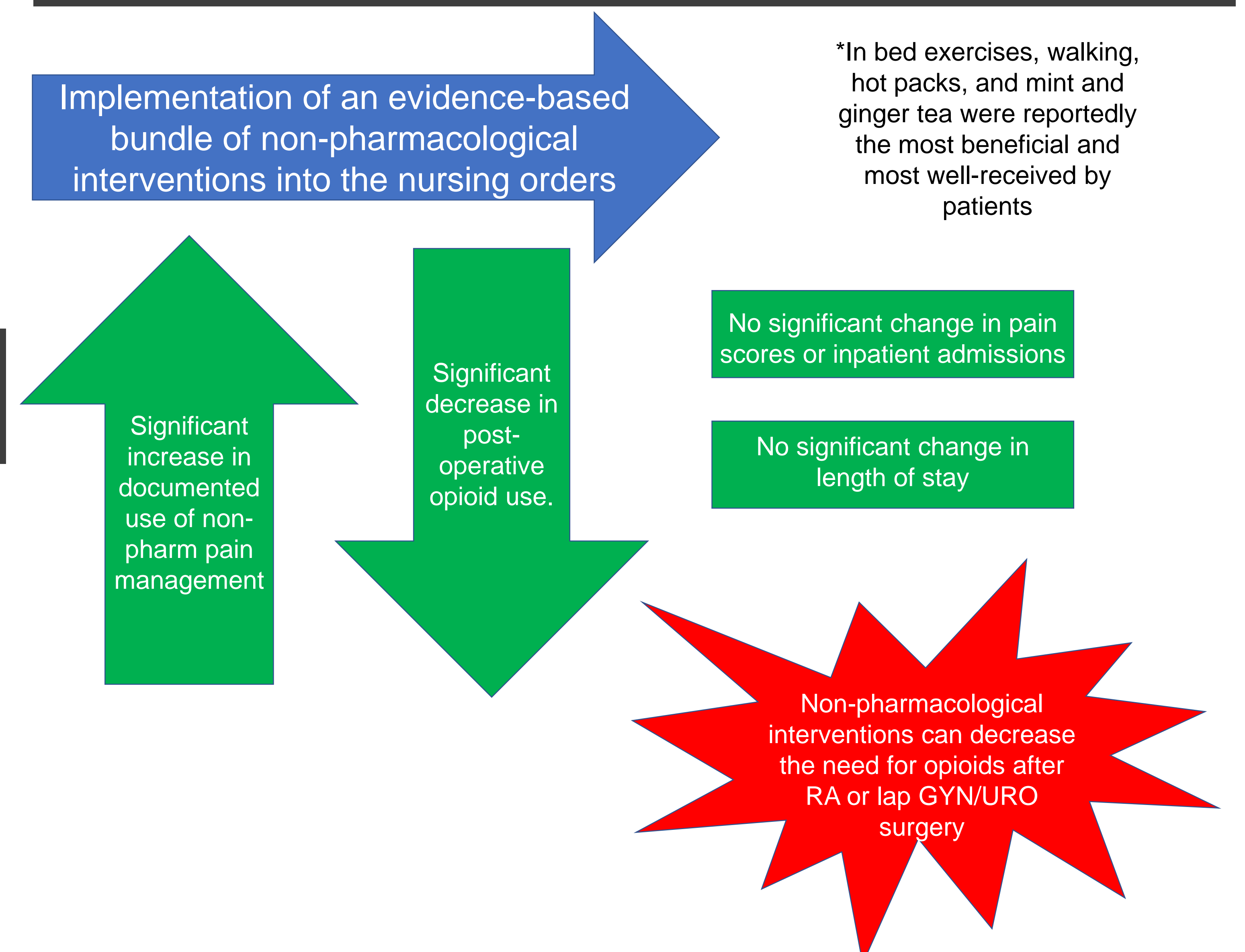
Outcome	Pre-implementation (N = 96)	Post-implementation (N = 86)	Significance
Documented Non-Pharm Interventions, median (Interquartile Range)	0 (2)	3 (6)	.000
MEQ Opioid Use, median (Interquartile Range)	4 (8)	0 (5)	.010
Pain Score Floor, median (Interquartile Range)	4 (3)	3 (4)	.039
Discharge, median (Interquartile Range)	3 (5)	3 (4)	.321
Patients Converted to Inpatient for Pain, count (%)	2 (2.0)	3 (3.4)	0.670

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Limitations

- Multiple non-pharmacological interventions in bundle - unclear which interventions provided pain relief and to what degree
- Documentation of non-pharm interventions not done in real-time
- 7.1% of all patients were missing initial follow up assessment notes, 6.6% were missing discharge follow up assessment notes, and 6.6% were missing both – affecting data on documented non-pharm interventions and pain scores

Conclusions



Future Directions

- Further research on the individual strategies listed in this bundle, in addition to gum chewing and abdominal binders, which are other feasible interventions in the short stay surgery population
- Bundle is likely transferrable to all abdominal laparoscopic surgery patients. Has already been added to order sets at ambulatory surgery center for GYN and URO population
- Other bundles should be created for other types of surgeries as well as for non-surgical patients