Implementing principles of enhanced recovery for surgical spine patients—A two-year journey

M. Kearney APN, ONC, M. Nottoli MSN, RN, ONC, R. Robinson RN, ONC, T. Wallace MSN, RN, ONC
Advocate Good Samaritan Hospital, Ortho/Trauma/Medical-Surgical unit

Malcolm Baldrige National Quality Award 2010 Award Recipient

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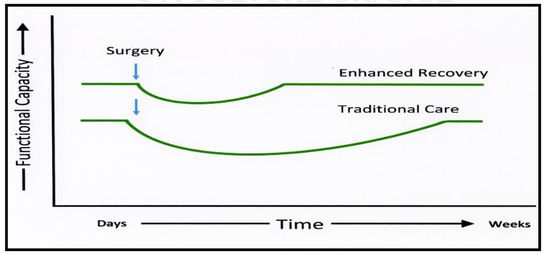
Background: *In the beginning . . .*

- Best practices not implemented for patients undergoing spine surgery which leads to increased complications, length of stay and cost
- Directive from Advocate Health Care to implement principles of enhanced recovery
- Created acronym "STAAR" (Surgical Team Approach to Advanced Recovery)

Why Enhanced Recovery??

- Better patient outcomes
  - Reduce physiologic stress of surgery
  - Expedite return to preoperative functional status
- Shorter LOS and increased throughput
- Avoided complications
  - Reduce postoperative organ dysfunction (morbidity)
- Improved patient satisfaction
- Reduced cost
- Encompasses Preoperative, Perioperative and Post-operative practice changes to achieve →

S A CULTURE CHANGE



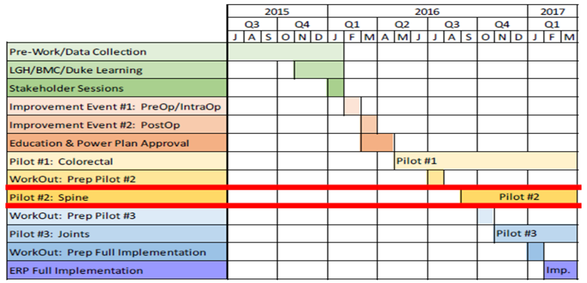
REQUIRES A CULTURE CHANGE

Objectives of Poster:

- Identify components of enhanced recovery
- Describe the performance improvement process used to implement an enhanced recovery program for surgical spine patients at our hospital

Methods:

- Identify key stakeholders and administrative support and gain commitment to STAAR Core Team/Steering Committee in order to have champions in all areas:
  - Operations Improvement Leader
  - VP and Chief Medical Officer
  - Specialty surgeon and Hospitalist
  - Head of Anesthesia Department
  - Nursing representative/CNS
  - System representative (Clinical Effectiveness)
  - Ad hoc membership as needed (PT, Care management, Clinical Informatics, Dietary, etc)
- Educate key members on Enhanced Recovery key elements, benefits, costs and GSAM approach
- Plan out timeline for implementation in phases to eventually encompass all surgical patients
- Set metrics, Target State, identify gaps for each pilot



Spine Pilot Implementation:

- Identify metrics, baseline and target
- Collaborate with spine surgeons to create power plans for preoperative and postoperative care
- Create patient care pathway
- Hire a Spine Navigator
- Educate surgeons and physician assistants and gain their support
- Develop patient education—including preop class
- Present education to staff in all areas including RNs, UAPs, PT/OT, Presurgical Testing and Perioperative areas

Spine Go-Live September, 2016!!

Metrics:

Outcome Metrics	Initial		Target	
	Surgical Inpatients	Spine Surgical Inpatients	Surgical Inpatients	Spine Surgical Inpatients
	Truven EDW 1/1/15-9/30/15 Elective; Risk adjusted (n=2,500)	Truven EDW 4/1/15-3/31/16 Elective; Risk adjusted (n=301)		
Average of LOS	3.41	(all complexities) 3.17	2.40	(Complex) 2.9
Average of Complications Index	0.98	1.06	0.70	0.90
	NSQIP 7/1/14 - 6/30/15 Risk adjusted Odds Ratio (n=1,212)	NSQIP 1/1/15 – 12/31/15 Risk adjusted Odds Ratio (n=187)		
Aggregate Morbidity	1.05 (6)	1.28 (9)	0.98 (5)	0.94 (5)
VTE & PE	1.86 (10)	1.22 (9)	1.10 (7)	0.98 (5)

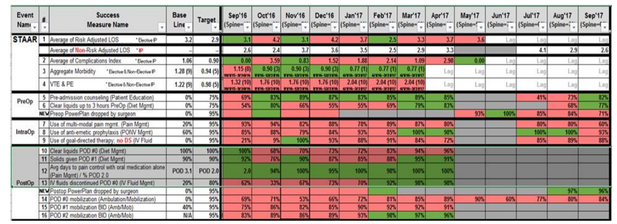
	In-Process Metrics	Initial	Target
		Spine Elective Surgical Inpatients	
		Chart Review (n=10) 1/1/15 – 12/31/15	
Pre Op	1. Pre-admission counseling (Patient Education)	0%	75%
	2. Clear liquids up to 3 hours PreOp (Diet Mgmt)	0%	75%
Intra Op	3. Use of multimodal pain mgmt. (Pain Mgmt)	20%	95%
	4. Use of anti-emetic prophylaxis (PONV Mgmt)	60%	95%
	5. Use of goal-directed therapy (IV Fluid Mgmt)	0%	95%
Post Op	6. Clear liquids POD #0 (Diet Mgmt)	100%	100%
	7. Solids given POD #1 (Diet Mgmt)	90%	90%
	8. Avg days to pain control with oral medication alone (Pain Mgmt)	POD 3.1	POD 2.0
	9. IV fluids discontinued POD #0 (IV Fluid Mgmt)	20%	80%
	10. POD #0 mobilization met (Ambulation/Mobilization)	0%	95%
	11. POD #1 mobilization met (Ambulation/Mobilization)	40%	95%
	12. POD #2 mobilization met (Ambulation/Mobilization)	N/A	95%
		HCHAPS	HCHAPS
Post D/C	13. Pain Management %ile rank	N/A	95
	14. Discharge Information %ile rank	N/A	95
	15. Care Transitions %ile rank	N/A	95

Wins and Challenges: *In the end? . . .*

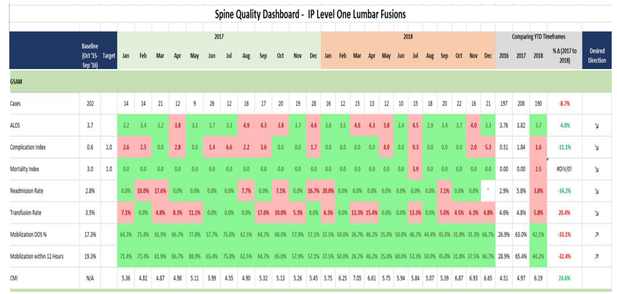
- Cost savings with PT fitting braces
- Surgeon and PA support of standardized care using power plans
- Metrics being tracked at system level—operational definitions differ (see ongoing Results→)
- Challenge to address sacred cows (NPO after midnight, bedrest on day of surgery)
- Issue with high carb drink for diabetic patients
- Navigator position eliminated so data collection and follow-up was affected
- Variations in practice among surgeons--affects length of stay
- Education of staff on units and auditing showed improvement in mobilizing patients initially and then a decline—work ongoing for sustainment of gains

- Challenges to the change process
  - We have silos in our delivery of care to spine patients
  - Takes time to incorporate new processes into workflow for MDs, PAs, RNs & PCAs
  - Managing large numbers of spine patients with last minute additions to surgical schedule
  - Having a good pain management program especially for patients with acute on chronic pain
  - Maintaining good communication with all stakeholders

Results *(Initial)*: All Spine Fusions



Results *(ongoing)*: Level 1 Lumbar Fusions



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