The Perioperative Surgical Home: Where Do We Stand?

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Vanderbilt Department of Anesthesiology
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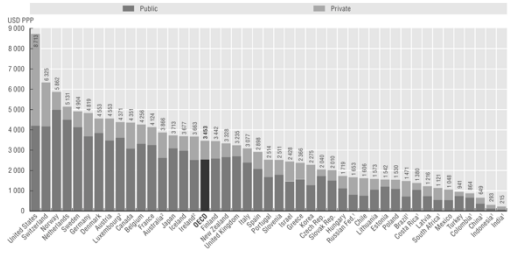
Disclosures

- I have no conflict of interests to disclose

Outline

- Define the Perioperative Surgical Home (PSH)
- Discuss evidence for the PSH
- Discuss the Vanderbilt Perioperative Consult Service

How did we get here?



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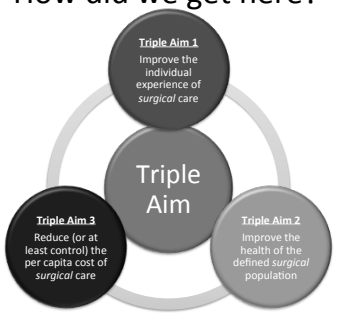
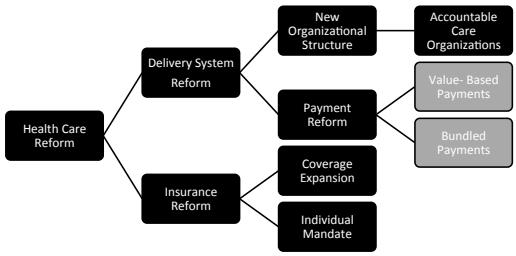


US Health Care Reform



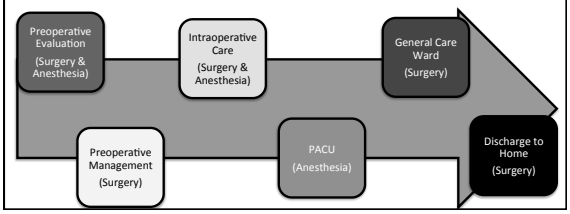
What is the Perioperative Surgical Home?

- A system of coordinated care aimed at:
  - Improving patient experience
  - Making surgical care safe
  - Improving efficiency
  - Improving outcomes
  - Decreasing Cost

Typical Surgical Patient

Two teams that don't discuss perioperative goals:

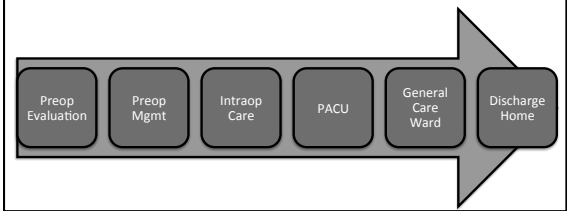
Individualized (to surgeon and anesthesiologist), Uncoordinated Care Across the Entire Perioperative Period



Perioperative Surgical Home:

One team with one shared goal:

Safe, Effective, Efficient, and Coordinated Care Across the Entire Perioperative Period



What do we know?

- University of California – Irvine
  - Total Knee Replacement
  - Total Hip Replacement
- University of Alabama at Birmingham
- Vanderbilt University Medical Center

University of Alabama at Birmingham

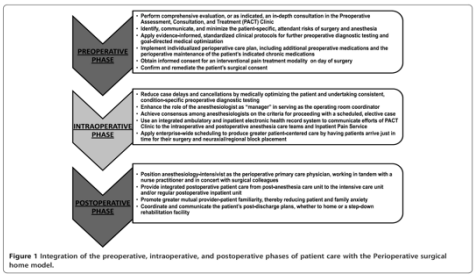
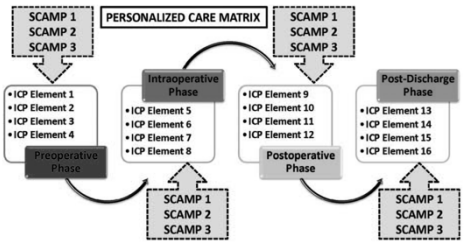


Figure 1 Integration of the preoperative, intraoperative, and postoperative phases of patient care with the Perioperative surgical home model.

Vetter et al. BMC Anesthesiology 2013, 13:6

University of Alabama at Birmingham



Vetter et al. Anesth & Analg 2014; 118(5)

University of California – Irvine

Table 2. Demographics

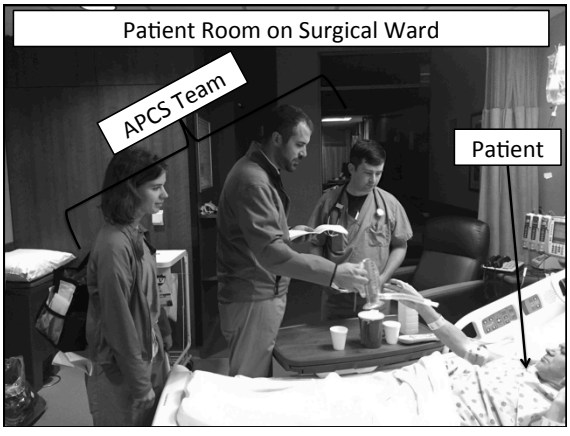
	THA *n* = 51	TKA *n* = 95
Age mean	64 ± 2.68	66 ± 10.08
BMI mean	27.4 ± 6.1	29.8 ± 6.11
Anesthesia type		
Spinal	75%	71%
General	25%	29%
Payor mix		
Medicare	50%	52%
Medi-Cal	24%	17%
Commercial	26%	31%
ASA physical status		
I	2.04%	0.00%
II	30.61%	19.10%
III	65.31%	75.28%
IV	2.04%	5.62%
OR duration (h)	2.0 ± 0.65	3.0 ± 0.67

Data are expressed as median ± SD.
THA = total hip arthroplasty; TKA = total knee arthroplasty; BMI = body mass index; OR = operating room.

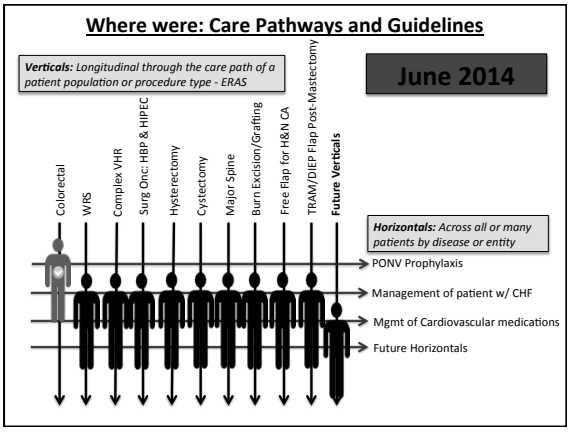
- Median LOS TKA – 3 days
- Median LOS THA – 3 days
- Approximately half of patients were discharged somewhere other than home

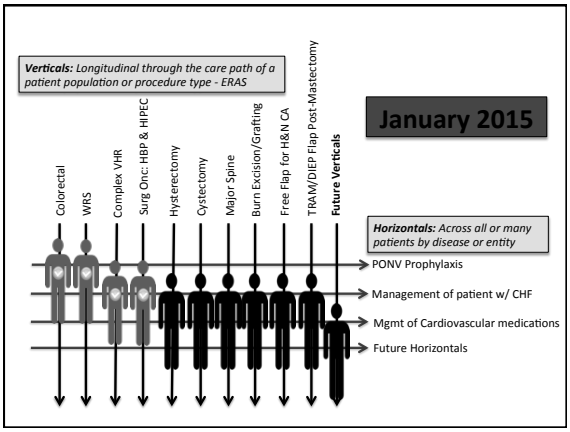
Vanderbilt University

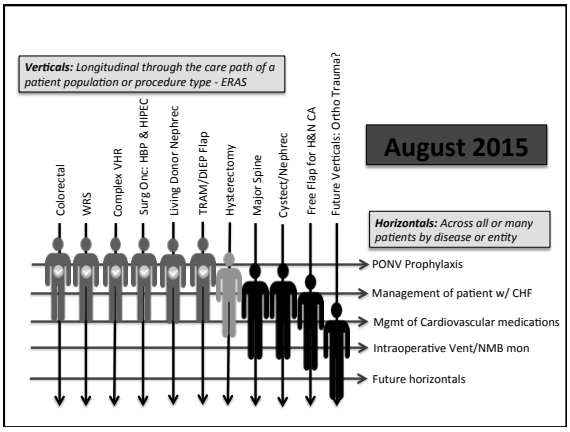
- Perioperative Consult Service
  - Covers six service lines
  - Provides perioperative coverage of pain, nausea, fluids, and optimization of medical conditions



Where were: Care Pathways and Guidelines





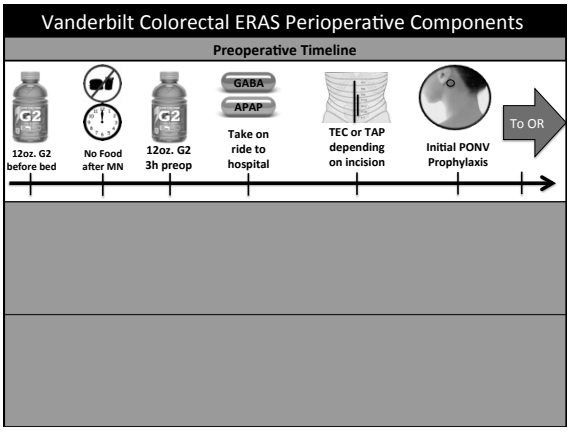


Paradigm Shift: ERAS *via* APCS

- Key factors prolonging stay after surgery:
  - Ileus
  - Need for IV analgesia
  - Need for IVF secondary to gut dysfunction
  - Bed rest caused by lack of mobility due to the above
- **APCS + ERAS** represents a paradigm shift in perioperative care:
  - Re-examines traditional practices, replacing them with evidence-based best practices ***when necessary***.
  - Comprehensive in scope, covering ***all components*** of patient's perioperative journey with surgeon ***and*** anesthesiologist

Our Methods

- **Philosophy**
  - Standardization, where possible, improves routine processes of care
  - Adherence to principles more important than recipe
  - Warning, this is a protocol – it does not have a brain
- **Metrics**
  - LOS, Readmissions
  - Pre-op/Intraop "Compliance"
  - Postoperative "Compliance"
  - PDSA to Learn of Other Areas for Improvement



Colorectal ERP

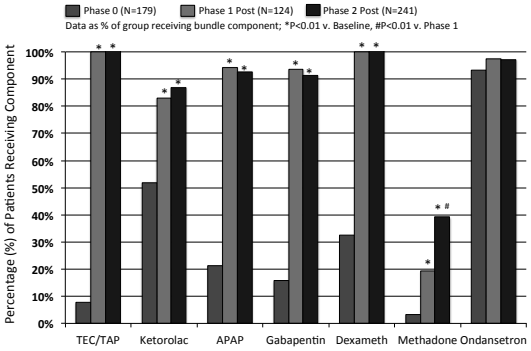
Effect of Implementation of Major Study Outcomes						
	Phase 0 (N=179)	Phase 1 (N=124)	Phase 2 (N=241)	P		
				0 v. 1	1 v. 2	0 v. 2
Mean Resource LOS (days)	5.3	4.9	4.3	0.47	0.15	<0.01*
Median Resource LOS (days)	4.24	3.32	3.32	<0.01*	0.61	<0.0001*
Reoperation	18 (10.1%)	13 (10.5%)	15 (6.22%)	1	0.15	0.20
Readmissions	21 (11.7%)	18 (14.5%)	34 (14.1%)	0.49	0.92	0.48
Hospital Cost	100%	98%	83%	0.05*		

* significant at 5% level; % Non-parametric Median Test for no difference in median cost among all phases

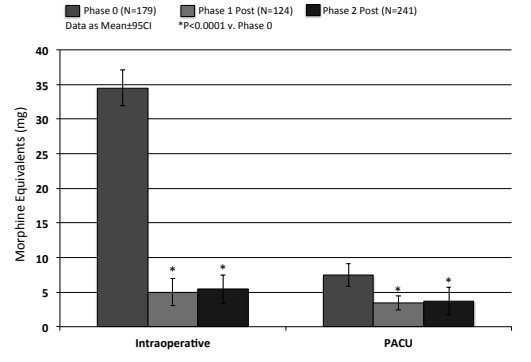
- Started June 2014: Exemplary Level (top decile) for LOS in NSQIP and have reduced median rLOS by 22% and cost by 17% since then.

McEvoy MD, et al. *Periop Med*, in submission

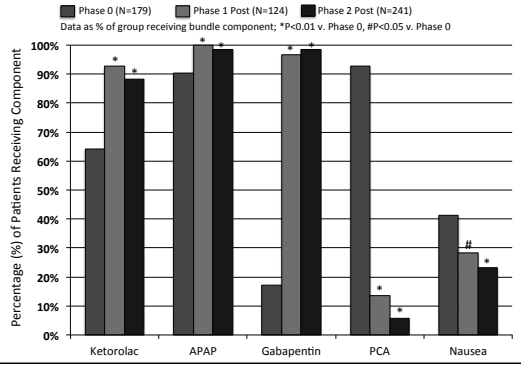
Preop and Intraop ERAS Bundle Components for Multimodal Analgesia Before and After Implementation of the ERAS Pathway for Colorectal Patients



Intraoperative and PACU Opioid Use by Phase



Use of Postoperative ERAS Bundle Components for Multimodal Analgesia Before and After Implementation of the ERAS Pathway for Colorectal Patients



Surgical Oncology ERP

	Phase 0 (N=95)	Phase 1 (N=123)	Difference (days)	% change	P
Mean rLOS	8.26	6.61	**-1.65**	-20%	0.02
Median rLOS	6.26	5.32	**-0.94**	-15%	
SD	6.40	3.84	**-2.55**	-40%	

Surgical Weight Loss ERP

Table 2	Phase 0 (N=388)	Phase 1 (N=229)	P-value
Length of Stay			
Mean resource LOS*	1.57(0.62)	1.47 (0.44)	0.03
Median resource LOS*	1.37	1.35	ns
LOS <2 days	83%	89%	0.05
Mean Discharge Time	14:47	14:18	0.02
Readmissions*			
Readmit within 7 days	2.8%	3.1%	ns
Readmit within 30 days	7.5%	8.3%	ns
ED Visit within 7 days	5.4%	5.2%	ns
ED Visit within 30 days	10.1%	10.0%	ns
Total Hospital Costs**			
Mean	1.00 (0.27)	0.88 (0.19)	<0.0001
Median***	1.00 (0.27)	0.86 (0.17)	<0.0001

Started Jan 2015 as a top performer for LOS and have <u>increased</u> the % home on POD1 (liberated ~50 bed-days) and <u>reduced</u> cost by 14%.

McEvoy MD, et al. , ASA 2015 Symposium