THE PERIOPERATIVE SURGICAL HOME: THE UAB EXPERIENCE

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MY PRESENTATION OBJECTIVES

➤ Describe the details of a prototypic Perioperative Surgical Home model

➤ Foster the conversation about the various topics central to the rationale, implementation, and validation of any Perioperative Surgical Home model

My Conflicts of Interest: I have nothing to disclose.
**One Definition of the Perioperative Surgical Home**

- Patient-centered, institution-led, interdisciplinary, team-based, coordinated, standardized care model
- Guides the patient in a highly integrated manner through the entire surgical continuum, from the decision for surgery to post-hospital discharge care
- Seeks to enhance surgical experience and outcomes and to add measurable value to the highest cost segment of healthcare
- Multiple effective variants based upon institutional infrastructure, resources, and internal/external forces

Overarching Goals of the UAB Perioperative Surgical Home: **Maximize Health Care Value**

**Triple Aim of Institute for Healthcare Improvement**
1. Improve the individual patient’s experience of care
2. Improve the health of (surgical) population
3. Reduce per capita costs of health care

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**INCREASING THE VALUE OF SURGICAL CARE**

Perioperative Surgical Home must **identify, implement, sustain, and document** quality, safety, and satisfaction improvement and cost reduction strategies:

- **Decrease practice variability** – including unit of service cost for anesthesia services
- **Increase practice efficiency** – including the maximum use of advanced practice nurses
- **Patient risk stratification and mitigation** – including open dialogue about futile surgery
- **Perioperative optimization of patient co-morbidities** – including optimal timing of surgery
- **Patient education and counseling** – including “What can I do to improve the outcomes that are most important to me?”

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WHAT PROBLEMS WE INITIALLY HELPED FIX

- Persistent high rates of surgical case delays and case cancellations
- Inconsistent PACT scheduling and inefficient PACT throughput
- Incomplete documentation of surgical patient co-morbidities
- Inaccurate patient medication reconciliation and instructions
- Regional and epidural analgesia block-related delays
- Variable preoperative blood orders

WHAT OTHER PROBLEMS CAN WE HELP FIX?

- Unnecessary preoperative laboratory testing, ECGs, x-rays
- Inconsistent and inadequate patient optimization for surgery
- High failure-to-rescue events
- Greater than desired ICU and hospital readmission rates
- Greater than expected morbidity and mortality rates
- Excessive skilled nursing facility (SNF) admission rates
- Excessive post-discharge SNF LOS
ROBUST INTEGRATION OF THE ENTIRE PERIOPERATIVE CONTINUUM OF CARE

Preoperative Phase  Intraoperative Phase  Postoperative Phase  Post-Discharge Phase

Three Key Design Elements
1. Patient and Family Centeredness and Shared Decision-Making
2. Team Member Collaboration Across the Continuum
3. Seamless Health Information Exchange and Shared Care Plans

THE PERIOPERATIVE SURGICAL HOME REQUIRES THE SUCCESSFUL INTEGRATION OF THE 4 PHASES OF CARE...
EACH CAN BE SUCCESSFULLY INITIATED ON ITS OWN

AT UAB, WE INITIALLY FOCUSED ON AND CONTINUE TO EMPHASIZE THE PRE-OPERATIVE PHASE...

THEN WE TACKLED THE POST-OPERATIVE PHASE

UAB PREOPERATIVE ASSESSMENT, CONSULTATION, AND TREATMENT CLINIC

• Semantic and clinical evolution has occurred at UAB
  – PAT = Pre-Admission Testing (1990)
  – PAC = Pre-Anesthesia Assessment Clinic (1995)
  – PACT Clinic = Preoperative Assessment, Consultation, and Treatment Clinic (2010)
• Road trips to Johns Hopkins, Brigham and Women’s, Cleveland Clinic (Cleveland), and Mayo Clinic (Rochester)
• PACT Clinic moniker intentionally chosen to communicate our comprehensive scope of practice and services
• Frankly, we continue to grow into its full potential…😊

THE KEY ELEMENTS OF THE UAB PACT CLINIC

- Core Group of Invested Physicians
- Experienced Clinic/Nurse Manager
- Autonomous Advanced Practice Nurses
- Dedicated Clinic Space
- CMS-Compliant EMR with New Patient and Follow-Up Notes
- Patient Care Protocols and Pathways
- The Patient
PERIOPERATIVE SURGICAL HOME AS A NEW VALUE STREAM MAP THAT CAN BE DETAILED USING A 4-PHASE PROCESS ACTIVITY MAPPING

PREOPERATIVE PROCESS ACTIVITY MAPPING

Surgical Clinic Evaluation and Decision to Operate

Surgical Posting of Case on OR Schedule

PACT Clinic Evaluation, Optimization, Clearance

Patient Arrives on DOS with “Anesthesia Clearance”
VALUE STREAM MAPPING: PSH PREOPERATIVE PROCESS ACTIVITY MAPPING

- Preoperative patient risk screening tool
- Formal E&M code-based preoperative consultation
- Robust patient-centered shared decision-making
- Therapeutic interventions
- Post-discharge care planning before surgery
- Preoperative clearance
- Scheduling of surgery

THE PREOPERATIVE CONSULTATION

“"A fundamental objective of a consult is to optimize a patient’s underlying disease before it is compounded by the insult of surgery.””

INTEGRATED CARE PATHWAY (ICP)

- ICP = Task-orientated care plan that details all the **essential steps or elements** in the care of **all** patients undergoing a **specific surgical procedure**

- **Toyota Production System (TPS) approach** to making cars and **LEAN Six Sigma** methodology are rigorously applied to surgical patient care.

- Collect and analyze data to **highlight** and **address** any **lack of process standardization** and resulting **inefficiencies, rework, and waste**

EXAMPLES OF INTEGRATED CARE PATHWAYS

Integrated care pathways in use in Britain

**Medical conditions**
- Acute myocardial infarction
- Chest pain
- Unstable angina
- Deep venous thrombosis
- Care of the elderly: acute admission
- Depression in the elderly
- Rehabilitation of multiple sclerosis (acute care)
- Stroke
- Transient ischaemic attack
- Asthma
- Inflammatory bowel disease
- Varicose veins
- Acute pneumonia
- Acute exacerbation of chronic obstructive lung disease

**Surgical conditions or procedures**
- Abdominal hysterectomy
- Total hip joint replacement
- Total knee joint replacement
- Management of fractured neck of femur
- Colectomy
- Prostatectomy
- Carotid endarterectomy
- Laminectomy
- Coronary artery bypass graft
- Open and laparoscopic cholecystectomy
- Transurethral resection of the prostate
- Aortic/mitral valve replacement
- Mastectomy
- Laparoscopic hernia repair


PERIOPERATIVE RISK OPTIMIZATION AND MANAGEMENT PLANNING TOOL

- Conventional national clinical practice guidelines can have limited local clinician buy-in and adoption
- **PROMPT™** → local clinician-designed/driven approach:
  - Accommodates patients’ individual differences
  - Respects and seeks local providers’ clinical acumen
  - Keeps pace with the rapid growth of medical knowledge
- **PROMPT™** is not prescriptive “cook-book” medicine but a local best practices-based decision support tool
- **Some examples of PROMPTs (55+ in pipeline at UAB):**
  - PONV, postoperative delirium; patient-centered blood management; perioperative anticoagulant therapy

Vetter TR, Jones KA: Perioperative Surgical Home: Perspective II. In Value-Based Care. Anesthesiology Clinics (Fleisher LA, Guest Editor) 2015 [In Press].
In this example, the Integrated Care Pathway (ICP) (e.g., for total hip arthroplasty) contains 16 specific, standardized Elements, and the patient’s co-morbidities warrant 3 Perioperative Risk Optimization and Management Planning Tools (PROMPT 1, PROMPT 2, PROMPT 3) (e.g., for preoperative anemia, diabetes mellitus, and postoperative cognitive dysfunction/delirium).

**ENHANCED RECOVERY AFTER SURGERY (ERAS): “TROJAN HORSE”**

- Pioneered in Scandinavia and UK by surgeons
- Evidence-based “fast-track” approach to surgery
- Multifaceted perioperative care pathway designed to attenuate the stress response during all three phases of the perioperative period and the patient’s surgical journey
- Facilitate the maintenance of bodily composition and organ function and to achieve early recovery

ENHANCED RECOVERY AFTER SURGERY (ERAS)

- Preoperative
  - Preadmission patient counseling and education, including anxiety reduction techniques
  - Prehabilitation of nutritional (protein) status, cardiopulmonary reserve, and muscle strength
  - No prolonged fasting
  - No or selective bowel preparation
  - Oral fluid and carbohydrate loading immediately prior to surgery
  - Antibiotic and thromboembolism prophylaxis
  - Oral adjuvant analgesics but no sedative premedication
  - Single subarachnoid dose of a moderately hydrophilic opioid for laparoscopic surgery

- Intraoperative
  - Short-acting anesthetic agents and medications
  - No surgical drains
  - Avoidance of salt and water overload
  - Goal-directed fluid therapy
  - Restrictive blood transfusion triggers
  - Maintenance of normothermia via body warmer and intravenous fluid warmer
  - Anesthetic depth monitoring in patients at risk for delirium and cognitive dysfunction

- Postoperative
  - Mid-thoracic epidural analgesia with local anesthetic but no opioid for open laparotomy
  - No nasogastric tube
  - Prevention of postoperative nausea and vomiting
  - Avoidance of salt and water overload
  - Restrictive blood transfusion triggers
  - Early oral nutrition
  - Early mobilization
  - Non-opioid intravenous and oral analgesics


PYRAMID OF PRACTICE CHANGE

- Practice Change
- Decision Support
- Analytics
- Informatics (Data)

PERIOPERATIVE MEDICAL INFORMATICS

Perioperative epidemiology is an area of growth – ultimately enabling the perioperative care team to translate precise real-time information into improved outcomes.

Proposed Model of the Flow of Data Throughout the Perioperative Period

![Image of decision support model]


ANESTHESIOLOGY AND OUR NEEDED MORE COMPETITIVE STRATEGY

- Anesthesiology is facing strong economic pressures that require a broader competitive strategy.

- Looming austere, constrained economic landscape and need to provide a more effective and efficient product

- To strengthen the future viability of our specialty: Urgent need for anesthesiologists to challenge our current, historically successful business model and our assumptions about the market forces, mission, and core competencies of our specialty

**THE ANESTHESIOLOGIST AND PERIOPERATIVE MEDICINE**

- Necessary to expand the core knowledge, skills, and experience expected of the anesthesiologist
- Need to view "**Perioperative Medicine**" as an expansion of the specialty, rather than an abdication of the traditional and still vital intraoperative role
- Not all anesthesiologists will be able or willing to play a role in this new activity.
- But just as with the seminal development within anesthesiology of the subspecialties of critical care medicine and pain medicine, a subset will need to do so and be supported by colleagues in their efforts.

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**BUT, IDEALLY, A HIGHLY COLLABORATIVE AND THUS SYMBIOTIC RELATIONSHIP…**

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![Diagram showing collaboration between different healthcare professionals]

- American Society of Anesthesiologists
- American College of Surgeons
- Society of Hospital Medicine
- American College of Physicians
- American Academy of Family Physicians
- American Association of Nurse Practitioners
- American Association of Nurse Anesthetists

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Can we all play nice in the sandbox?

Let’s hope so...

For everyone’s sake
FEW FINAL OBSERVATIONS...
There is no limit to what can be accomplished if it doesn't matter who gets the credit.
Ralph Waldo Emerson
(1803 – 1882)

Health care must be a business —
But medicine remains an art and a science, and the successful practice of medicine is all about strong relationships with one’s patients and one’s colleagues.

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UAB Perioperative Surgical Home “Incubator”