Deliver Value with Volume and Operating Room Efficiencies

Anthony M. DiGioia III, M.D.

December 10, 2013
9:30am-10:45am
11:15am-12:30pm

www.pfcc.org/IHIOREfficiencies

Learning Objectives

- Deliver value and volume safely by building a Patient Focused Care Center
- Use performance and process improvement tools to improve outcomes and experiences while reducing costs
Value in Health Care

Value = Outcomes / Cost

Why is “Value” Important?

- New Delivery Systems
- New Payment Platforms:
  - Bundling
  - Referenced Based Pricing
We All Define Value Differently

The Patient and Family are our end users and are the only way for all of us to understand value…

Value for Patients and Families Results in Value for Care Givers and Organizations
To Achieve Value Based Care

- Care pathways, process improvement, safety initiatives, disease management and other overlays to the current structure are beneficial, but not sufficient
- Fundamental restructuring is required for significant improvement

Deliver Value by Developing a Patient Focused Care Center

- Deliver care for a specific medical condition (or health) but viewed from the patient’s and family’s perspective
- Treatment for a full cycle of care by design
- Reorganize and manage all resources to meet the needs of patients and families
- Accountability for all outcomes and costs
Value and Accountable Care

Clinical Outcomes, Quality and Safety

Patient and Family at the Center

Patient Reported Outcomes and SDM

True $ Cost $

Developing a Hospital within a Hospital

Free Standing Subspecialty Hospital

Inside an Existing Hospital
IHI National Forum: Deliver Value with Volume and Operating Room Efficiencies

Our Journey in Developing the Bone and Joint Center

- 1,600+ surgeries per year, only 2 OR’s a day and 3 FT surgeons
- Over 88% of patients are discharged to home...and with lowest length of stay
- Best outcomes as measured by readmission rates, transfusion rates, infection rates and SCIP compliance and functional outcomes
- Lowest cost per case (real costs)

BJC Annual Report and Outcomes: http://www.pfcc.org/annual-reports/

Bone and Joint Center at Magee Women's Hospital of UPMC

- Named to the US News and World Report Top 50 Best Hospitals
- From start-up to #35
3 Keys

1. View All Care as an Experience Through the Eyes of Patients and Families
2. Co-Design
3. Implementation

How We Got Started...

- One month post-op f/u surveys for every patient and family
- Determine your Current State, care pathway and the true Touchpoints and Care Givers
- Start a Patient and Family Advisory Council
Patient and Family Centered Care Methodology and Practice

Amazingly simple… simply amazing

www.pfcc.org

We Need to Build Unique Cross-Functional Care Teams

Care Giver
Any person within a care setting whose work directly or indirectly touches a patient’s or family’s experience (ie: It’s a team effort)

Touchpoints
Key moments and places in any care setting where patient and family care experiences are affected by any Care Giver
The PFCC Methodology and Practice Provides the Steps to Success

1. Define Care Experience
2. Guiding Council
3. Shadow, Current State, Urgency
4. Working Group thru Touchpoints
5. Shared Vision of the Ideal
6. PFCC Project Teams to Close the Gap

Why a “Care Experience”?

- Defined through the eyes of patients and families and includes everything that impacts their journey toward wellness.
- Examples include outcomes, interactions with and among care providers, transitions in care, safety, costs, and everyone that touches their experience along the way.
## Example: The Day of Surgery Care Experience

<table>
<thead>
<tr>
<th>Touchpoints</th>
<th>Care Givers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking</td>
<td>None</td>
</tr>
<tr>
<td>Family Lounge</td>
<td>DOS Nurse</td>
</tr>
<tr>
<td>Pre-Op Room</td>
<td>DOS Nurse, Anesthesiologist, CRNA, Surgeon</td>
</tr>
<tr>
<td>Operating Room</td>
<td>Surgeon, Sales Rep, CRNA, PA, Surgical Tech, RN, Float RN, Anesthesiologist, Housekeeper</td>
</tr>
<tr>
<td>PACU</td>
<td>Transporter, X-Ray Tech, RN, Anesthesiologist</td>
</tr>
<tr>
<td>Floor</td>
<td>PCT, Surgeon, Dietary Aide, Rehab Aide, Internist, PT, Housekeeper, PA, Case Manager, Social Work, RN, Transporter</td>
</tr>
</tbody>
</table>

## Silo’s, Teams and Bundling

*Follow the Patient*
Value with Volume

“While we believe that the concept of operating-room efficiency is an important one, and efficiency can be improved by making process changes, we also want to emphasize that no increase in efficiency can substitute for good, safe patient care.”


Tools to Understand Your Current State, Efficiencies and Opportunities for Improvement
Shadowing

The Catalyst for Improvement is Shadowing

Shadowing is repeated real-time and independent observation of patients and families as they move through each step of their health care journey.
It’s Easy

We watch what people do (and do not do) and listen to what they say (and do not say). The easiest thing about the search for insight – in contrast to the search for hard data – is that it’s everywhere and it’s free…

…This enlightened perception reveals the experience, not just the process.

Change by Design, Tim Brown

---

Shadowing

- Determines Your Current State Accurately and Efficiently
- Current State of Care Pathways
- Continuously Engages End Users in Real Time: Patients, Families and Care Givers (Co-Design)
Shadowing: Day of Surgery

Observations
- Main Entrance Locked at 5am
- No Valet
- Expected Routine Disrupted
- Difficult/Long Walk to Surgical Services

Resolution
- Directions to Enter ER
- Skeletal Parking 5am-9am until Valet
- Clear Wayfinding
- Wheelchairs and Scooters Available at Garage

OR Flow Data Sheet
### Sample Flow Study Data Sheet

- Patient in room
- Surgeon in room
- Anesthesiologist in room
- Induction (gen/l) and start of spinal
- Anesthesia turnover to OR staff
- Foley in
- Prep complete
- Tourniquet inflation (for TKR’s)
- Incision
- Tourniquet deflation (for TKR’s)
- Surgeon breaks scrub
- Incision closed
- Patient out of room/PSA called
- PSA in room
- PSA out of room
- Case Cart in room
- Begin to open
- Next patient in room

### OR Observation Project

Information about the processes surrounding surgery were recorded and analyzed. Many improvements were made to enhance OR efficiency and process flow as well as patient safety.
OR Observation Project

Ortho OR Efficiency Times (43 Cases)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Best</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setup</td>
<td>0:32:27</td>
<td>0:30:28 - 0:33:31</td>
</tr>
<tr>
<td>Total Surgeon Operating Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Incision to break)</td>
<td>Hip (14 cases)</td>
<td>0:27:17 - 0:32:27</td>
</tr>
<tr>
<td></td>
<td>Knee (27 cases)</td>
<td>0:27:01 - 0:50:16</td>
</tr>
<tr>
<td>Total Surgeon Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Surgeon in to</td>
<td>Hip (14 cases)</td>
<td>0:33:21 - 0:46:00</td>
</tr>
<tr>
<td>surgeon break)</td>
<td>Knee (28 cases)</td>
<td>0:30:26 - 0:55:33</td>
</tr>
<tr>
<td>Total Case Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Patient in to patient</td>
<td>Hip (14 cases)</td>
<td>1:16:00 - 1:21:40</td>
</tr>
<tr>
<td>out)</td>
<td>Knee (27 cases)</td>
<td>1:10:17 - 1:41:49</td>
</tr>
<tr>
<td>Closure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Surgeon breaks scrub to</td>
<td>Hip (14 cases)</td>
<td>0:19:01 - 0:27:05</td>
</tr>
<tr>
<td>Incision closure)</td>
<td>Knee (28 cases)</td>
<td>0:16:57 - 0:27:00</td>
</tr>
<tr>
<td>Total Operating Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Incision to Incision</td>
<td>Hip (14 cases)</td>
<td>0:48:19 - 0:52:50</td>
</tr>
<tr>
<td>Closed)</td>
<td>Knee (28 cases)</td>
<td>0:43:58 - 1:13:14</td>
</tr>
<tr>
<td>PSA Out to Next Patient In</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hip (14 cases)</td>
<td>0:23:49 - 0:33:18</td>
</tr>
<tr>
<td></td>
<td>Knee (18 cases)</td>
<td>0:18:28 - 0:34:00</td>
</tr>
<tr>
<td>Turnover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Patient out to Next</td>
<td>Hip (12 cases)</td>
<td>0:27:41 - 0:37:14</td>
</tr>
<tr>
<td>patient in)</td>
<td>Knee (15 cases)</td>
<td>0:22:02 - 0:37:00</td>
</tr>
</tbody>
</table>

High Performance OR Teams and Efficiencies

Patient Out to Patient In (Turnover) Comparison: Magee-Womens Ortho & Clinical Advisory Board (CAB)

Close to Cut Comparison: Magee-Womens Ortho & Clinical Advisory Board (CAB)
Drives Efficiencies and Safe Surgery

Patient In to Patient Out: Magee-Womens Ortho & Clinical Advisory Board (CAB)

- Hip:
  - Magee: 75 minutes
  - CAB: 138 minutes
- Knee:
  - Magee: 72 minutes
  - CAB: 152 minutes

Dedicated Team Approach

- OR’s Assigned to BJC to Manage
- OR Specialty Team
- Subspecialty Anesthesia Team
- Central Processing Partnership
- Housekeeping Team
- Assigned Nurses to Pre-Op Room
- Committed PACU Slots
Create Efficiencies
3 Teams for 2 OR’s

3\textsuperscript{rd} Team: “Swing Team”
\begin{itemize}
  \item Consists of RN and Surgical Tech
  \item Liaison for Central Processing, Equipment, Patient Prep, etc.
  \item Relieve 1\textsuperscript{st} and 2\textsuperscript{nd} teams for breaks
  \item Double check all prep for next patient
\end{itemize}

Strategy for Post-Op
\begin{itemize}
  \item PACU gridlock affects OR efficiencies
  \item Anesthesia recovery time
  \item Multidisciplinary approach improves OR throughput
\end{itemize}

UPMC… Who are we?

- UPMC is a $10 billion integrated global health system
- Pittsburgh’s largest employer with 55,000 employees
- More than 20 academic, community, and specialty hospitals and 400 outpatient sites, employs more than 3,200 physicians, and an array of rehabilitation, retirement, and long-term care facilities

Surgical Care Experience Working Groups

- Trauma
- Day of Surgery
- Breast Reconstruction
- Geriatric Hip Fracture
- CV/Heart Valve
- Bariatric
- Transplant
- Hysterectomy
- Women’s Cancer
- Surgical Care Experience
Welcome to the Magee Bone and Joint Center

The Patient Focused Care Center

The Office Sets the Stage

- Education materials
- Surgery preparation
- Follow-up appointments
- Flow of accurate information
- OR Reservations/Equipment
“One Stop Shop”
Pre-op Testing and Education

- Efficient Pre-op Testing & Education
- Pre-discharge Planning
- Transitions of Care

Better Experience
- Complete Pre-op Testing & ED.
- Patient and Family Activation
- Inpatient Unit Tours
- Familiarity of Environment
- Familiarity with Care Givers

Decrease Cost
- Reduces OR Cancelations
- Reduces Delays
- Decreases LOS

Day of Surgery Experience
- MD meets patient and “coach” in holding area
- Shows up and ready to go.....
- Staff cross training

Reduce anxiety
No delays or cancellations
SSI Reduction: SCIP and Project Joints
(MRSA/MSSA Test, Pre-op Washes, ETOH Intra-op Prep)

100% Appropriate ABX Selection
100% Given within 1 hour of surgery
98% ABX D/C within 24 hrs. of surgery
BJC has surpassed all state and national averages

Patient Activation/Partnership
Reduce Anxiety

$80K to $200K/SSI incident
Reduces Readmissions/Therapies

Blood Conservation Project
(TXA, Efficient Surgery, Fluid Expansion)

TKA 1%, THA 0%, Overall 0.8%
Decreased LOS
Reduced Complications

No Blood Draws/Pronto 7
No Transfusion
Reduce Anxiety

No AutoVac Savings $50,100/yr
No T/C $350,000/year ($340/pt)
No T/S $210,000/year ($200/pt)
**Pain Management with Multimodal Anesthesia**

- Improved Outcomes:
  - Rapid Rehab
  - Increased ROM
  - Maximized Mobility

- Manage Expectations:
  - Integrate Pre-, Intra-, Post-op

- Increase Patient Comfort with Complimentary Therapies – Ice, Music, Massage and CPM

- Better Experience:
  - Decrease LOS
  - Discharge to Home
  - Reduce PT Needs

**Patients Tell Their Stories for Other Patients’ Benefit**

Is your pain more or less than expected?

Patients Tell Their Stories for Other Patients’ Benefit
Improving Safety, Quality & Waste Reduction
Total Joint Replacement Care Experience

<table>
<thead>
<tr>
<th></th>
<th>BJC</th>
<th>National Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average LOS</td>
<td>2.7 days</td>
<td>3.3 days</td>
</tr>
<tr>
<td>Infection Rates</td>
<td>0.3%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Mortality Rates</td>
<td>0.0%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Discharge Destination</td>
<td>89% Home</td>
<td></td>
</tr>
</tbody>
</table>

**TKA**

**THA**

Average LOS: 2.4 days
Infection Rates: 0.7%
Mortality Rates: 0.0%
Discharge Destination: 96% Home

Value in Health Care

Value = Outcomes

Cost
What is TDABC?

Time Driven Activity Based Costing

Identifies true cost to deliver care and for any care experience:

- Personnel
- Space
- Equipment
- Consumables

Robert S. Kaplan and Michael E. Porter
“How to Solve the Cost Crisis in Health Care,” HBR 2011

Link Between Cost and Process Improvement

PFCC

Shadowing

TDABC
Level #1: Overall Care Cycle

Level #2: Study Care Cycle

Level #3: Process Maps

True Cost Results TJR 30 Days Prior to 90 Days Post-Op

<table>
<thead>
<tr>
<th></th>
<th>THR</th>
<th>TKR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumables</td>
<td>54%</td>
<td>45%</td>
</tr>
<tr>
<td>Personnel</td>
<td>43%</td>
<td>51%</td>
</tr>
<tr>
<td>Space/Equipm</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>Map #</td>
<td>Care Experience</td>
<td>THR Total</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>1</td>
<td>New Patient Scheduling Visit</td>
<td>0.1%</td>
</tr>
<tr>
<td>1a</td>
<td>Pre-Surgical Office Visit (30 days pre surgery)</td>
<td>2%</td>
</tr>
<tr>
<td>1b</td>
<td>Renaissance Billing</td>
<td>0.3%</td>
</tr>
<tr>
<td>1c</td>
<td>Administration Support - Surgery</td>
<td>3%</td>
</tr>
<tr>
<td>2</td>
<td>Pre-Op Testing</td>
<td>2%</td>
</tr>
<tr>
<td>3</td>
<td>Day of Surgery</td>
<td>3%</td>
</tr>
<tr>
<td>3a</td>
<td>Operating Room</td>
<td>57%</td>
</tr>
<tr>
<td>3b</td>
<td>Central Sterile</td>
<td>0.6%</td>
</tr>
<tr>
<td>4</td>
<td>PACU</td>
<td>2.6%</td>
</tr>
<tr>
<td>5a</td>
<td>Inpatient Post-Op Day Zero</td>
<td>4.5%</td>
</tr>
<tr>
<td>5b</td>
<td>Inpatient Post-Op Day 1</td>
<td>6.9%</td>
</tr>
<tr>
<td>5c</td>
<td>Inpatient Post-Op Day 2</td>
<td>5.9%</td>
</tr>
<tr>
<td>5d</td>
<td>Inpatient Post-Op Day 3</td>
<td>3.5%</td>
</tr>
<tr>
<td>6</td>
<td>Home Therapy &amp; 4 week Follow-Up</td>
<td>5.2%</td>
</tr>
<tr>
<td>7</td>
<td>3 Month Follow-Up (90 days Post-Op)</td>
<td>2.6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>THR</th>
<th>TKR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personnel</strong></td>
<td><strong>22%</strong></td>
<td><strong>29%</strong></td>
</tr>
<tr>
<td><strong>Space &amp; Equipment</strong></td>
<td><strong>1%</strong></td>
<td><strong>1%</strong></td>
</tr>
<tr>
<td><strong>Consumables</strong></td>
<td><strong>77%</strong></td>
<td><strong>70%</strong></td>
</tr>
</tbody>
</table>
PFCC Shadowing TDABC Helps Providers

Process Improvement

- Redesign processes
- Eliminates steps
- Reduce waste and idle time
- Optimize cycle of care

Personnel and Resource Utilization

- Who should be doing the work? Where?
- Reduce unused staff time, equipment, facilities

PFCC Shadowing TDABC A Common Platform

- Generate conversations between clinical, administrative and financial leaders
You can develop:

- Bundling
- Referenced Based Pricing
- “Surgical Care Experience” Based Homes
Go Shadow! Webinar
Wednesday, December 18, 2013
1:00-2:00pm

Deliver Value by Design
Pittsburgh, PA
Spring 2014

PFCC VisionQuest
Pittsburgh, PA
October 9-10, 2014

www.pfcc.org for more information

Questions